

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

FIRST SOLAR, INC.,)	
)	
Plaintiff,)	
)	
v.)	C.A. No. _____
)	
JINKOSOLAR HOLDING CO., LTD., JINKO)	JURY TRIAL DEMANDED
SOLAR CO., LTD., JINKOSOLAR)	
(VIETNAM) INDUSTRIES CO. LTD., JINKO)	
SOLAR TECHNOLOGY SDN. BHD.,)	
ZHEJIANG JINKO SOLAR CO., LTD.,)	
JINKOSOLAR (U.S.) HOLDING INC.,)	
JINKOSOLAR (U.S.) INC., JINKO SOLAR)	
(U.S.) MANUFACTURING INC., and)	
JINKO SOLAR (U.S.) INDUSTRIES INC.,)	
)	
Defendants.)	

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff First Solar, Inc. (“First Solar”), by its undersigned counsel, brings this Complaint for patent infringement against Defendants JinkoSolar Holding Co., Ltd.; Jinko Solar Co., Ltd.; Jinko Solar (Vietnam) Industries Co. Ltd.; Jinko Solar Technology Sdn. Bhd.; Zhejiang Jinko Solar Co., Ltd.; JinkoSolar (U.S.) Holding Inc.; JinkoSolar (U.S.) Inc.; Jinko Solar (U.S.) Manufacturing Inc.; and Jinko Solar (U.S.) Industries Inc. (collectively, “JinkoSolar”) alleging, with knowledge as to its own acts and on information and belief as to all other matters, as follows:

NATURE OF THE ACTION

1. This action arises under the patent laws of the United States, 35 U.S.C. §§ 1 *et seq.*, including specifically 35 U.S.C. § 271, based on JinkoSolar’s infringement of U.S. Patent No. 9,130,074 (the “’074 Patent”).

2. First Solar is a leading solar technology company and a global provider of responsibly produced, eco-efficient solar modules. Born in the Midwest, headquartered in the

Southwest, and with products that are shipped worldwide, First Solar is an American success story. Driven by a passion for innovation and powered by American ingenuity, First Solar has consistently invested in American manufacturing and American jobs. Today, it is the only U.S.-headquartered company among the world's ten largest producers of solar products.

3. Solar modules or panels, which are made of solar cells, are a sustainable alternative to traditional energy sources such as coal or gas. First Solar's solar modules, which use advanced thin film solar technology developed in its research facilities in California and Ohio, provide a competitive, high-performance, lower-carbon alternative to conventional crystalline silicon ("c-Si") solar modules. First Solar's modules have half the carbon footprint of conventional solar technology, use less water over the life of the module compared to c-Si modules and provide the fastest energy payback time in the industry. From raw material sourcing and manufacturing through end-of-life module recycling, First Solar's approach to technology embodies sustainability and ecological responsibility.

4. First Solar's unwavering dedication to innovative technology and sustainable energy is matched by its loyalty to the American value chain. As more and more companies are outsourcing their materials, labor and research to other countries, First Solar remains committed to investing in the American people and preserving domestic industry. In 2023 alone, First Solar's operations supported, directly and indirectly, over 15,000 jobs and generated nearly \$1.6 billion in labor income for the U.S. economy. With its commitment to cultivating domestic industry, First Solar is projected to support more than 30,000 jobs, representing almost \$2.8 billion in labor income, by 2026. And between 2016 and 2026, First Solar will have invested approximately \$4 billion in manufacturing and research and development infrastructure in the

United States. First Solar is the only company among the world's ten largest solar manufacturers that does not manufacture in China.

5. As the solar industry evolves, new technologies are adopted. One of those emerging technologies is TOPCon, which stands for "tunnel oxide passivated contact". TOPCon solar cells can cost-effectively achieve a high operational efficiency and have other desirable performance metrics. TOPCon solar cells can also have superior bifaciality, meaning that they are able to generate more power from sunlight absorbed from the side of the module that faces away from the sun. This improved bifaciality can further increase the efficiency of the module.

6. First Solar owns a large portfolio of patents covering methods of manufacturing solar cells, including patents on TOPCon technology. The '074 Patent asserted in this action is one of First Solar's TOPCon patents.

7. JinkoSolar, founded in 2006, is a company funded and supported by the Chinese government. JinkoSolar has historically manufactured its products in China. JinkoSolar has a history of unfairly competing with American companies, such as First Solar, by unlawfully dumping solar modules on the U.S. market.

8. JinkoSolar makes TOPCon solar cells overseas using methods covered by the '074 Patent. JinkoSolar incorporates these infringing solar cells in their TOPCon solar modules, including their Eagle®, Tiger Neo and Neo Green product lines. JinkoSolar imports these TOPCon solar cells and modules into the U.S., uses them in the U.S. and offers to sell and sells them in the U.S. thereby infringing the '074 Patent.

9. JinkoSolar is aware of the '074 Patent and has no excuse for its infringement. In July 2024, First Solar publicly announced to the solar industry that it owns patents on TOPCon technology and that it intends to enforce those patents against companies that practice

them without a license from First Solar. JinkoSolar is undoubtedly aware of that announcement, which was widely reported in the solar industry trade press. Even if the announcement escaped its attention, JinkoSolar was on notice of its infringing activity at least as of September 26, 2024, when First Solar notified JinkoSolar in writing of its infringement of the '074 Patent. Despite its knowledge of the '074 Patent, JinkoSolar has refused to take a license and has instead continued willfully to infringe the '074 Patent.

10. This suit seeks to hold JinkoSolar accountable for its unauthorized use of First Solar's patented inventions, to provide redress for the damage JinkoSolar has caused to First Solar, and to end JinkoSolar's infringement. JinkoSolar must not be permitted to use technological advances owned by First Solar unfairly to compete with First Solar's products.

THE PARTIES

11. Plaintiff **First Solar** is a Delaware corporation with its principal place of business located at 350 West Washington Street, Suite 600, Tempe, Arizona, 85288. First Solar produces advanced thin film solar modules designed and developed in the United States. It has a prominent manufacturing footprint in the United States, with three manufacturing locations in Ohio, a fourth factory in Alabama, and a fifth factory set to open in Louisiana in 2026.

12. First Solar is the only one of the world's ten largest solar manufacturers that is headquartered in the United States. Over the past two decades, First Solar has been committed to delivering high-quality, responsibly-produced American solar products to the global marketplace. First Solar manufactures advanced thin film solar modules that were designed and developed in the U.S. at a cost of over \$1.5 billion in cumulative R&D investment.

13. First Solar produces energy-efficient solar modules with a superior degradation rate, temperature coefficient, spectral and shading response, and the smallest

environmental footprint of any solar technology. Those modules have set industry benchmarks for quality, durability, reliability, design and sustainability. First Solar's solar products compete with other solar products, including JinkoSolar's TOPCon products.

14. First Solar has been a continuous innovator in the field and has built a robust intellectual property portfolio, including hundreds of patents covering inventions in solar technology, including TOPCon. First Solar's TOPCon portfolio includes patents and patent applications in the United States, Australia, Canada, China, Europe, Hong Kong, Japan, Mexico, Malaysia, Singapore, South Korea, the United Arab Emirates and Vietnam.

15. Defendant **JinkoSolar Holding Co., Ltd.** ("JinkoSolar Holding") is a company that was incorporated on August 3, 2007, in the Cayman Islands. It has a registered office located at Cricket Square, Hutchins Drive, P.O. Box 2681, Grand Cayman, KY1-1111, Cayman Islands, but its principal executive office is located at 1 Yingbin Road, Shangrao Economic Development Zone, Jiangxi Province, 334100, People's Republic of China.

16. JinkoSolar Holding "distributes its solar products and sells its solutions and services to a diversified international utility, commercial and residential customer base in China, the United States . . . and other countries and regions". (<https://ir.jinkosolar.com/news-releases/news-release-details/jinkosolar-announces-results-2024-annual-general-meeting>.) As of December 31, 2023, JinkoSolar Holding had 14 production facilities globally and 26 subsidiaries in the United States, Australia, Brazil, Canada, Chile, Denmark, Germany, India, Indonesia, Italy, Japan, Malaysia, Mexico, Nigeria, Saudi Arabia, South Korea, Switzerland, Turkey, the United Arab Emirates and Vietnam. At least as of December 31, 2023, JinkoSolar Holding had a global sales network with sales teams in numerous countries, including the United States, that conduct sales, marketing and brand development for JinkoSolar products around the world.

17. JinkoSolar Holding does business, directly and/or indirectly, throughout the United States, including in this judicial district. JinkoSolar Holding's business throughout the U.S. includes, either directly and/or through its subsidiaries, distributors, retailers, suppliers, customers and/or affiliates, importing into, and/or using, selling and/or offering to sell in, the U.S. TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent.

18. Defendant **Jinko Solar Co., Ltd.** ("Jinko Solar Co."), also known as "Jiangxi Jinko", is a corporation that was incorporated in the People's Republic of China on December 13, 2006. Jinko Solar Co. is JinkoSolar Holding's principal operating subsidiary. Jinko Solar Co. maintains a principal place of business at 1 Yingbin Road, Shangrao Economic Development Zone, Jiangxi Province, 334100, People's Republic of China, which is also the address of JinkoSolar Holding's principal executive office.

19. JinkoSolar's "Global Sales & Marketing Center" is located at No. 1, Lane 1466, Shenchang Road, Minhang District, Shanghai, China, 201106. The company has four main manufacturing bases: (i) China Production Base Headquarters, located at 1 Yingbin Avenue, Shangrao Economic Development Zone, Jiangxi Province, China, 334100; (ii) Jinko Solar US Manufacture Base, located at 4660 #200 POW-MIA Memorial Parkway, Jacksonville, Florida 32221, United States; (iii) Jinko Solar Vietnam Manufacture Base, located at Song Khoai Industrial Zone, Song Khoai Township, Quang Yen County, Quang Ninh Province, Vietnam; and (iv) Jinko Solar Malaysia Manufacture Base, located at PLOT 538, Tingkat Perusahaan 4B, Kawasan Perusahaan Bebas Perai, 13600 Perai, Penang, Malaysia. (<https://www.jinkosolar.com/en/site/global>.)

20. Jinko Solar Co. does business throughout the United States, including in this judicial district. Jinko Solar Co.'s business throughout the U.S. includes, either directly and/or through its subsidiaries, distributors, retailers, suppliers, customers and/or affiliates, importing into, and/or using, selling and/or offering to sell in, the U.S. TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent.

21. Defendant **Jinko Solar (Vietnam) Industries Co. Ltd.** ("JinkoSolar Vietnam") is a corporation that was incorporated in Vietnam on March 29, 2021. It has a principal place of business located at CN XL 06 11 Song Khoai Industrial Zone, Song Khoai Ward, Quang Yen Town, Quang Ninh, Vietnam and shares a geographical zone with one of JinkoSolar's main manufacturing bases. JinkoSolar Vietnam is a subsidiary of JinkoSolar Holding. JinkoSolar Vietnam operates under the direction of JinkoSolar Holding and/or Jinko Solar Co.

22. JinkoSolar Vietnam does business, directly and/or indirectly, throughout the United States, including in this judicial district. JinkoSolar Vietnam's business throughout the U.S. includes, either directly and/or through its distributors, retailers, suppliers, customers and/or affiliates, importing into, and/or using, selling and/or offering to sell in, the U.S. TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent.

23. Defendant **Jinko Solar Technology Sdn. Bhd.** ("JinkoSolar Malaysia") is a corporation that was incorporated in Malaysia on January 21, 2015. It has a principal place of business located at 2481 Tingkat Perusahaan 4A, Kawasan Perusahaan Bebas Perai, 13600 Perai, Penang, Malaysia, within close proximity to one of JinkoSolar's main manufacturing bases.

JinkoSolar Malaysia is a subsidiary of JinkoSolar Holding. JinkoSolar Malaysia operates under the direction of JinkoSolar Holding and/or Jinko Solar Co.

24. JinkoSolar Malaysia does business, directly and/or indirectly, throughout the United States, including in this judicial district. JinkoSolar Malaysia's business throughout the U.S. includes, either directly and/or through its distributors, retailers, suppliers, customers and/or affiliates, importing into, and/or using, selling and/or offering to sell in, the U.S. TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent.

25. Defendant **Zhejiang Jinko Solar Co., Ltd.** ("JinkoSolar Zhejiang"), also known as "Zhejiang Jinko", is a corporation organized and existing under the laws of China that was acquired by JinkoSolar Holding on June 30, 2009. It has a principal place of business located at 58 Yuan Xi Road, Yuan Hua Town, Haining, Zhejiang Province, China within close proximity of one of JinkoSolar's main manufacturing bases. JinkoSolar Zhejiang is a subsidiary of JinkoSolar Holding. JinkoSolar Zhejiang operates under the direction of JinkoSolar Holding and/or Jinko Solar Co.

26. JinkoSolar Zhejiang does business, directly and/or indirectly, throughout the United States, including in this judicial district. JinkoSolar Zhejiang's business throughout the U.S. includes, either directly and/or through its distributors, retailers, suppliers, customers and/or affiliates, importing into, and/or using, selling and/or offering to sell in, the U.S. TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent.

27. Defendant **JinkoSolar (U.S.) Holding Inc.** (“JinkoSolar (U.S.) Holding”) is a corporation that was incorporated in Delaware on June 7, 2011. Its principal office is located at 1901 S. Bascom Avenue, Suite 350 Campbell, CA 95008. JinkoSolar (U.S.) Holding is a subsidiary of JinkoSolar Holding. JinkoSolar (U.S.) Holding operates under the direction of JinkoSolar Holding and/or Jinko Solar Co.

28. JinkoSolar (U.S.) Holding does business, directly and/or indirectly, throughout the United States, including in this judicial district. JinkoSolar (U.S.) Holding’s business throughout the U.S. includes, either directly and/or through its distributors, retailers, suppliers, customers and/or affiliates, importing into, and/or selling, offering to sell and/or using in, the U.S. TOPCon solar cells that are manufactured overseas using methods claimed by the ’074 Patent, and/or products that incorporate TOPCon solar cells that are manufactured overseas using methods claimed by the ’074 Patent.

29. Defendant **JinkoSolar (U.S.) Inc.** (“JinkoSolar (U.S.)”) is a corporation that was incorporated in Delaware on August 19, 2010. Its principal office is located at 1901 S. Bascom Avenue, Suite 350 Campbell, CA 95008. JinkoSolar (U.S.) is a subsidiary of JinkoSolar Holding. JinkoSolar (U.S.) operates under the direction of JinkoSolar Holding and/or Jinko Solar Co.

30. JinkoSolar (U.S.) does business, directly and/or indirectly, throughout the United States, including in this judicial district. (<https://jinkosolar.us/about-jinko/> (stating that JinkoSolar (U.S.) “provides comprehensive, industry-leading, locally based sales and support to solar and storage installers and owners across the United States”).) JinkoSolar (U.S.)’s business throughout the U.S. includes, either directly and/or through its distributors, retailers, suppliers, customers and/or affiliates, importing into, and/or selling, offering to sell and/or using in, the U.S.

TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent.

31. Defendant **Jinko Solar (U.S.) Manufacturing Inc.** (“Jinko Solar (U.S.) Manufacturing”) is a corporation that was incorporated in Delaware on October 29, 2024. Jinko Solar (U.S.) Manufacturing is a subsidiary of JinkoSolar Holding. Jinko Solar (U.S.) Manufacturing operates under the direction of JinkoSolar Holding and/or Jinko Solar Co.

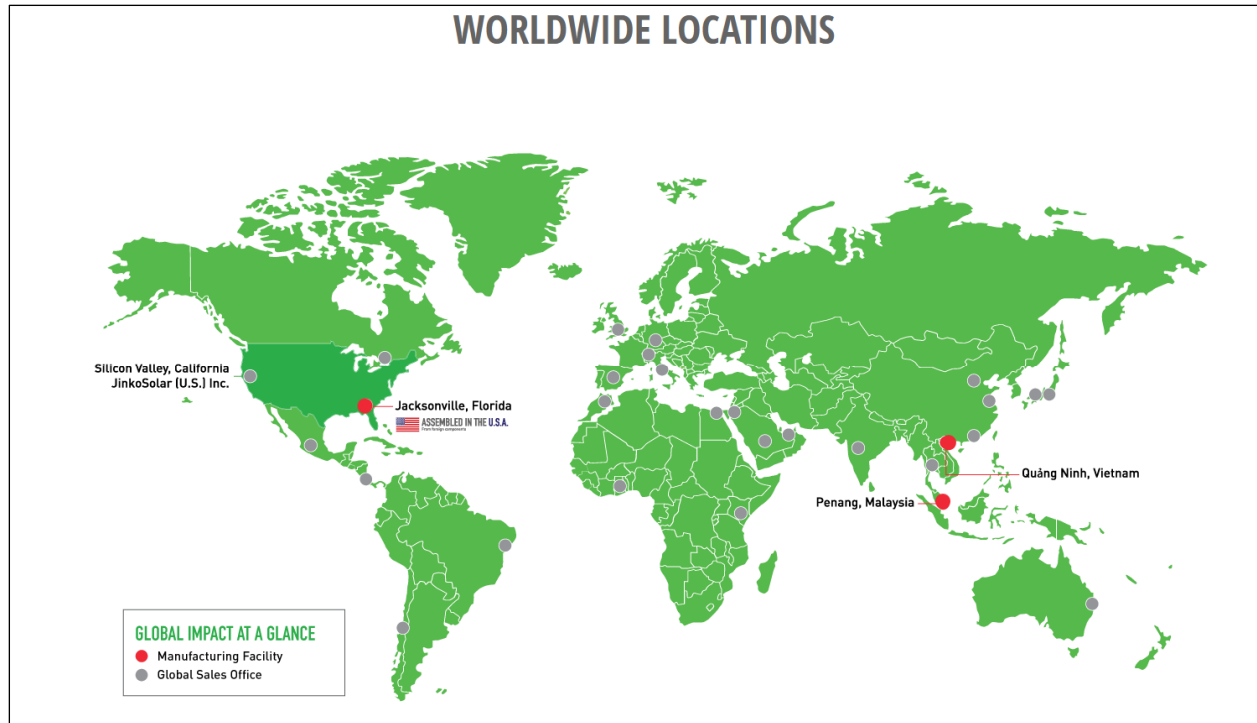
32. Jinko Solar (U.S.) Manufacturing does business, directly and/or indirectly, throughout the United States, including in this judicial district. Jinko Solar (U.S.) Manufacturing’s business throughout the U.S. includes, either directly and/or through its distributors, retailers, suppliers, customers and/or affiliates, importing into, and/or selling, offering to sell and/or using in, the U.S. TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent.

33. Defendant **Jinko Solar (U.S.) Industries Inc.** (“Jinko Solar (U.S.) Industries”) is a corporation that was incorporated in Delaware on November 16, 2017. It maintains a place of business at 4660 POW-MIA Memorial Parkway, Suite 200, Jacksonville, Florida 32221. Jinko Solar (U.S.) Industries is a subsidiary of JinkoSolar Holding. Jinko Solar (U.S.) Industries operates under the direction of JinkoSolar Holding and/or Jinko Solar Co.

34. Jinko Solar (U.S.) Industries does business, directly and/or indirectly, throughout the United States, including in this judicial district. Jinko Solar (U.S.) Industries’ business throughout the U.S. includes, either directly and/or through its distributors, retailers, suppliers, customers and/or affiliates, importing into, and/or selling, offering to sell and/or using

in, the U.S. TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent.

35. JinkoSolar's U.S. website (reproduced below) identifies the Quang Ninh, Vietnam, and Penang, Malaysia, locations as manufacturing facilities for solar cells and/or modules, and the Jacksonville, Florida, location as an assembly location for modules that are described as being "assembled in the U.S.A. from foreign components". JinkoSolar also identifies Haining, China as one of its manufacturing locations for TOPCon cells. (<https://www.pv-magazine.com/press-releases/jinkosolar-to-start-25-cell-production-in-jianshan-phase-ii-factory/>.) Thus, as described below, at least JinkoSolar Vietnam, JinkoSolar Malaysia, and JinkoSolar Zhejiang manufacture, overseas, TOPCon solar cells using methods claimed by the '074 Patent, and work together with and/or at the direction of JinkoSolar's Chinese and U.S. entities to import into, and/or use, offer to sell and/or sell, these TOPCon solar cells and products that contain such TOPCon solar cells in the United States.



(<https://jinkosolar.us/>.)

36. JinkoSolar has overlapping executives who control and operate JinkoSolar’s various companies and subsidiaries in a coordinated fashion.

- *Xiande Li* is the Founder, Chairman of the Board of Directors and CEO of JinkoSolar Holding; the Chairman of the Board of Directors of Jinko Solar Co.; and, at least as of January 22, 2025, the Chairman of Jinko Solar (U.S.) Industries and CEO of JinkoSolar (U.S.) and JinkoSolar (U.S.) Holding. (<https://ir.jinkosolar.com/investor-relations/board-of-directors>; State of Florida, Secretary of State, Jinko Solar (U.S.) Industries Inc. 2025 Foreign Profit Corporation Annual Report, filed on January 22, 2025 (“JinkoSolar (U.S.) Industries FL 2025 Annual Report”); State of California Office of the Secretary of State, Statement of Information Corporation of JinkoSolar (U.S.) Inc., filed on January 22, 2025 (“JinkoSolar (U.S.) CA Report 2025”); State of

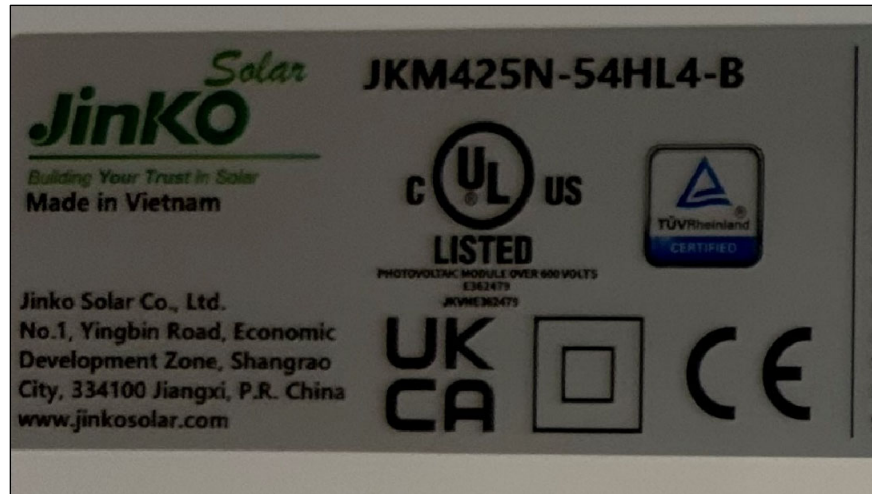
California Office of the Secretary of State, Statement of Information Corporation of JinkoSolar (U.S.) Holding Inc., filed on January 22, 2025 (“JinkoSolar (U.S.) Holding CA Report 2025”).)

- *Kangping Chen* served as the CEO of JinkoSolar Holding, and serves as the CEO of Jinko Solar Co. and Jinko Solar (U.S.) Industries. (<https://ir.jinkosolar.com/news-releases/news-release-details/jinkosolar-announces-changes-senior-management>; JinkoSolar (U.S.) Industries FL 2025 Annual Report.)
- *Xian Hua Li* founded both JinkoSolar Holding and Jinko Solar Co. (<https://www.wsj.com/market-data/quotes/JKS/company-people/executive-profile/86386352>.)
- *Haiyun (Charlie) Cao* is a director of JinkoSolar Holding and is the CFO/VP/Principal of Finance at Jinko Solar Co. (<https://ir.jinkosolar.com/investor-relations/board-of-directors>; <https://www.bloomberg.com/profile/person/18875264>; <https://ir.jinkosolar.com/news-releases/news-release-details/jinkosolar-announces-change-senior-management>.)
- *Zhihua Wang* previously served as the Director of Jinko Solar (U.S.) Industries; the Corporate Secretary at JinkoSolar (U.S.); the CFO at JinkoSolar (U.S.) Holding; and VP and General Manager: Finance at Jinko Solar Co. (State of Florida, Secretary of State, Jinko Solar (U.S.) Industries Inc. 2023 Foreign Profit Corporation Annual Report, filed on January 23, 2023; JinkoSolar (U.S.) Holding Inc. Statement and Designation by Foreign Corporation, Office of the Secretary of State of the State of California, filed July 12, 2011; State of California Office of the Secretary of State, Statement of Information Corporation of JinkoSolar (U.S.) Holding Inc., filed on

February 22, 2024; CE Declaration of Conformity for JinkoSolar Co., Ltd., issued on July 6, 2023.)

- *Gener/Gen Miao* served as the CMO of JinkoSolar Holding and serves as the CMO of Jinko Solar Co.; and, at least as of January 22, 2025, the CFO of JinkoSolar (U.S.) and JinkoSolar (U.S.) Holding. (<https://ir.jinkosolar.com/news-releases/news-release-details/jinkosolar-announces-changes-senior-management>; JinkoSolar (U.S.) CA Report 2025; JinkoSolar (U.S.) Holding CA Report 2025.)
- On December 15, 2020, *Kangping Chen, Gener Miao, Jiun-Hua Allen Guo, Shaoguo Ji, and Hao Jin*, who were CEO, CMO, COO, CHRO and CTO, respectively, of JinkoSolar Holding, resigned and began carrying out their respective responsibilities at Jinko Solar Co. (<https://ir.jinkosolar.com/news-releases/news-release-details/jinkosolar-announces-changes-senior-management>.)

37. JinkoSolar's various subsidiaries and companies are, as described above, interconnected and work in concert with one another. Further evidence of such coordination literally appears on JinkoSolar's product. For example, JKM425N-54HL4-B—a solar module that is sold in the U.S.—has a label (below) that bears the “Jinko Solar” brand name, states that the product is “Made in Vietnam” and lists the name and China address of Jinko Solar Co., Ltd.

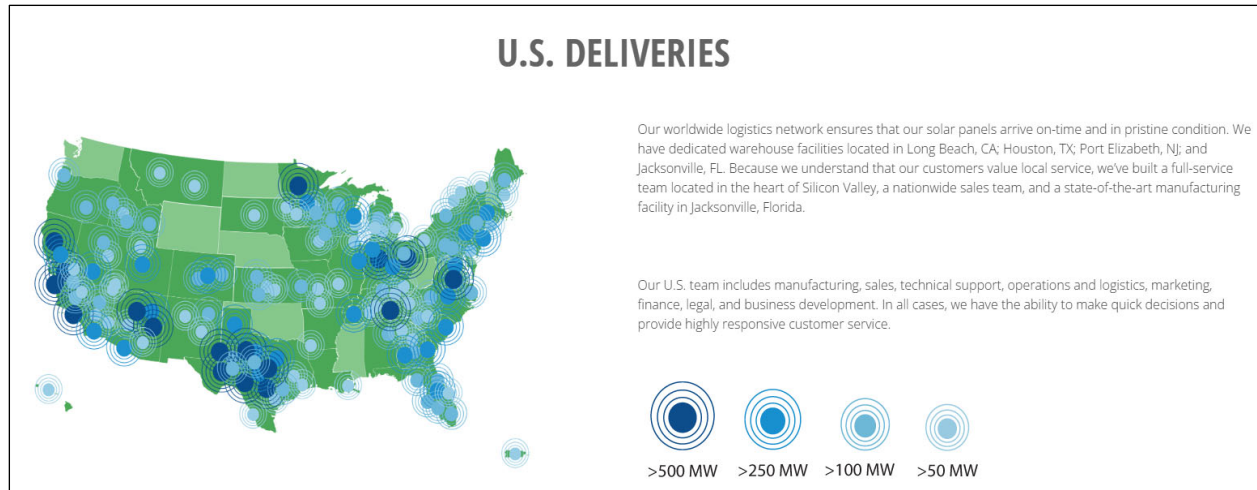


38. JinkoSolar’s U.S. website lists its global headquarters as No. 1, Lane 1466, Shenchang Road, Minhang District, Shanghai, China. (<https://jinkosolar.us/about-jinko/>.)

39. JinkoSolar states that it has deployed “more than 28 GW [gigawatt] in the U.S and Canada”, and that its “EAGLE® is a trusted choice for U.S. solar and storage projects”. (<https://jinkosolar.us/about-jinko/>.)

40. JinkoSolar has “a network of distributors across the United States strategically located to serve every state in the country. [JinkoSolar’s] distribution partners are suppliers of PV system components, enabling [them] to provide reliable delivery and service to all of [their] customers”. (<https://jinkosolar.us/>.) JinkoSolar’s distribution partner, ABC Supply Co. Inc., has multiple locations in Delaware, including in Stanton, Dover and Milton. (<https://www.abcsupply.com/locations/>.) JinkoSolar also supplies customers in Delaware with solar modules through Green Street Solar. (<https://www.ensolar.com/green-street-solar/>.)

41. JinkoSolar makes deliveries of its products throughout the United States, including to the state of Delaware, as noted on its U.S. website.



(<https://jinkosolar.us/>.)

JURISDICTION AND VENUE

42. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a) because the claims herein arise under the Patent Laws of the United States, 35 U.S.C. §§ 1 *et seq.*, including 35 U.S.C. § 271.

43. This Court has personal jurisdiction over JinkoSolar Holding because it manufactures, and/or induces its subsidiaries, distributors, retailers, suppliers and/or affiliates to manufacture, TOPCon solar cells overseas using methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods. JinkoSolar Holding imports into, and/or uses, sells and/or offers to sell in, the U.S., and/or induces its subsidiaries, distributors, retailers, suppliers, customers and/or affiliates to import into, and/or use, sell and/or offer to sell in, the U.S., TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods. JinkoSolar Holding availed itself of this forum by purposefully directing its activities here; JinkoSolar Holding intentionally placed, and continues to place, into the stream of commerce TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells

made overseas using the claimed methods, with the knowledge, understanding and/or expectation that those TOPCon solar cells, and products that incorporate such TOPCon solar cells, will be sold in Delaware. JinkoSolar Holding intentionally supplies TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods, directly, and/or to and/or through its subsidiaries, affiliates, distributors and/or retailers, with the intention that such products will be sold to, and purchased and used by, customers in Delaware. JinkoSolar Holding derives substantial revenue from sales of TOPCon solar products, in Delaware, that incorporate TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent. This action arises from these activities directed at the U.S., including Delaware, by JinkoSolar Holding. Exertion of personal jurisdiction in this forum over JinkoSolar Holding does not offend traditional notions of fair play and substantial justice because of the aforementioned contacts JinkoSolar Holding has with this forum.

44. This Court has personal jurisdiction over Jinko Solar Co. because it manufactures, and/or induces its subsidiaries, distributors, retailers, suppliers and/or affiliates to manufacture, TOPCon solar cells overseas using methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods. Jinko Solar Co. imports into, and/or uses, sells and/or offers to sell in, the U.S., and/or induces its subsidiaries, distributors, retailers, suppliers, customers and/or affiliates to import into, and/or use, sell and/or offer to sell in, the U.S., TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods. Jinko Solar Co. availed itself of this forum by purposefully directing its activities here: Jinko Solar Co. intentionally placed, and continues to

place, into the stream of commerce TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods, with the knowledge, understanding and/or expectation that those TOPCon solar cells, and/or products that incorporate such TOPCon solar cells, will be sold in Delaware. Jinko Solar Co. intentionally supplies TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods, directly, and/or to and/or through its subsidiaries, affiliates, distributors and/or retailers, with the intention that such products will be sold to, and purchased and used by, customers in Delaware. Jinko Solar Co. derives substantial revenue from sales of TOPCon solar products, in Delaware, that incorporate TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent. This action arises from these activities directed at the U.S., including Delaware, by Jinko Solar Co. Exertion of personal jurisdiction in this forum over Jinko Solar Co. does not offend traditional notions of fair play and substantial justice because of the aforementioned contacts Jinko Solar Co. has with this forum.

45. This Court has personal jurisdiction over JinkoSolar Vietnam because it manufactures, and/or induces its subsidiaries, distributors, retailers, suppliers and/or affiliates to manufacture, TOPCon solar cells overseas using methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods. JinkoSolar Vietnam imports into, and/or sells and/or offers to sell in, the U.S., and/or induces its distributors, retailers, suppliers and/or affiliates to import into, and/or use, sell and/or offer to sell in, the U.S., such TOPCon solar cells made overseas using the methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods. JinkoSolar Vietnam induces its affiliates, distributors, retailers, suppliers and/or

customers to use, offer to sell and/or sell in the U.S. such TOPCon solar cells made overseas using the methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods. JinkoSolar Vietnam availed itself of this forum by purposefully directing its activities here; JinkoSolar Vietnam intentionally imports, offers to sell, sells and/or places into the stream of commerce TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods, with the knowledge, understanding and/or expectation that those TOPCon solar cells, and/or products that incorporate such TOPCon solar cells, will be sold in Delaware. JinkoSolar Vietnam intentionally imports, offers to sell and/or sells TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods, directly and/or through affiliates, distributors and/or retailers, with the intention that such products will be sold to, and purchased and used by, customers in Delaware. JinkoSolar Vietnam derives substantial revenue from sales of TOPCon solar products, in Delaware, that incorporate TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent. This action arises from these activities directed at the U.S., including Delaware, by JinkoSolar Vietnam. Exertion of personal jurisdiction in this forum over JinkoSolar Vietnam does not offend traditional notions of fair play and substantial justice because of the aforementioned contacts JinkoSolar Vietnam has with this forum.

46. This Court has personal jurisdiction over JinkoSolar Malaysia because it manufactures, and/or induces its subsidiaries, distributors, retailers, suppliers and/or affiliates to manufacture, TOPCon solar cells overseas using methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods.

JinkoSolar Malaysia imports into, and/or sells and/or offers to sell in, the U.S., and/or induces its distributors, retailers, suppliers and/or affiliates to import into, and/or use, sell and/or offer to sell in, the U.S., such TOPCon solar cells made overseas using the methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods. JinkoSolar Malaysia induces its affiliates, distributors, retailers, suppliers and/or customers to use, offer to sell and/or sell in the U.S. such TOPCon solar cells made overseas using the methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods. JinkoSolar Malaysia availed itself of this forum by purposefully directing its activities here; JinkoSolar Malaysia intentionally imports, offers to sell, sells and/or places into the stream of commerce TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods, with the knowledge, understanding and/or expectation that those TOPCon solar cells, and/or products that incorporate such TOPCon solar cells, will be sold in Delaware. JinkoSolar Malaysia intentionally imports, offers to sell and/or sells TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods, directly and/or through affiliates, distributors and/or retailers, with the intention that such products will be sold to, and purchased and used by, customers in Delaware. JinkoSolar Malaysia derives substantial revenue from sales of TOPCon solar products, in Delaware, that incorporate TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent. This action arises from these activities directed at the U.S., including Delaware, by JinkoSolar Malaysia. Exertion of personal jurisdiction in this forum over JinkoSolar Malaysia does not offend

traditional notions of fair play and substantial justice because of the aforementioned contacts JinkoSolar Malaysia has with this forum.

47. This Court has personal jurisdiction over JinkoSolar Zhejiang because it manufactures, and/or induces its subsidiaries, distributors, retailers, suppliers and/or affiliates to manufacture, TOPCon solar cells overseas using methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods. JinkoSolar Zhejiang imports into, and/or sells and/or offers to sell in, the U.S., and/or induces its distributors, retailers, suppliers and/or affiliates to import into, and/or use, sell and/or offer to sell in, the U.S., such TOPCon solar cells made overseas using the methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods. JinkoSolar Zhejiang induces its affiliates, distributors, retailers, suppliers and/or customers to use, offer to sell and/or sell in the U.S. such TOPCon solar cells made overseas using the methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods. JinkoSolar Zhejiang availed itself of this forum by purposefully directing its activities here; JinkoSolar Zhejiang intentionally imports, offers to sell, sells and/or places into the stream of commerce TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods, with the knowledge, understanding and/or expectation that those TOPCon solar cells, and/or products that incorporate such TOPCon solar cells, will be sold in Delaware. JinkoSolar Zhejiang intentionally imports, offers to sell and/or sells TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or products that incorporate such TOPCon solar cells made overseas using the claimed methods, directly and/or through affiliates, distributors and/or retailers, with the intention that such

products will be sold to, and purchased and used by, customers in Delaware. JinkoSolar Zhejiang derives substantial revenue from sales of TOPCon solar products, in Delaware, that incorporate TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent. This action arises from these activities directed at the U.S., including Delaware, by JinkoSolar Zhejiang. Exertion of personal jurisdiction in this forum over JinkoSolar Zhejiang does not offend traditional notions of fair play and substantial justice because of the aforementioned contacts JinkoSolar Zhejiang has with this forum

48. In the event that this Court does not have personal jurisdiction over Defendants JinkoSolar Holding, Jinko Solar Co., JinkoSolar Vietnam, JinkoSolar Malaysia or JinkoSolar Zhejiang by virtue of the above-pleaded facts, this Court nonetheless has personal jurisdiction over each of these entities under Federal Rule of Civil Procedure 4(k)(2). Under Rule 4(k)(2), personal jurisdiction over a defendant is established if the claim arises under federal law, the defendant is not subject to jurisdiction in any state's courts of general jurisdiction and exercising jurisdiction is consistent with the United States Constitution and laws. All three elements are met: (i) this case arises under federal law pursuant to 35 U.S.C. §§ 1 *et seq.*, including 35 U.S.C. § 271; (ii) if by virtue of the above, this Court does not have general jurisdiction over JinkoSolar Holding, Jinko Solar Co., JinkoSolar Vietnam, JinkoSolar Malaysia or JinkoSolar Zhejiang, then such entities are not subject to jurisdiction in any state's courts of general jurisdiction; and (iii) JinkoSolar Holding, Jinko Solar Co., JinkoSolar Vietnam, JinkoSolar Malaysia and JinkoSolar Zhejiang have sufficient contacts with the U.S. to justify the exercise of jurisdiction consistent with the United States Constitution and laws because these entities have purposefully availed themselves of the privilege of conducting business in the U.S. by manufacturing TOPCon solar cells overseas using methods claimed by the '074 Patent that are for

importation into, and/or used, offered for sale and/or sold in, the U.S., and/or incorporated into products that are for importation into, and/or used, offered for sale and/or sold in the U.S., and/or inducing others to do the same. JinkoSolar Holding and Jinko Solar Co. control and otherwise direct and authorize all activities of their U.S. and foreign subsidiaries to conduct infringing activities on their behalf, such as importing into, and/or selling, offering to sell and/or using in, the U.S. TOPCon solar cells that are manufactured overseas using the methods claimed by the '074 Patent and/or products that incorporate such TOPCon solar cells.

49. This Court has personal jurisdiction over JinkoSolar (U.S.) Holding, JinkoSolar (U.S.), Jinko Solar (U.S.) Manufacturing and Jinko Solar (U.S.) Industries because they are incorporated in Delaware and reside within, and have consented to, personal jurisdiction within this judicial district.

50. The subsidiaries and companies of JinkoSolar, acting in concert and as principal and agents, have done, and continue to do, substantial, continuous and systematic business in this judicial district, including marketing, selling and distributing products that contain TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and have committed, and continue to commit, acts of patent infringement, and/or have done so through intermediaries (including subsidiaries, distributors, retailers, suppliers, customers and/or affiliates), such as distributing, offering to sell, selling, importing and/or using TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and/or TOPCon products that use such TOPCon solar cells, and/or inducing others to do the same.

51. JinkoSolar has derived substantial revenue from sales in Delaware of products that include TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent.

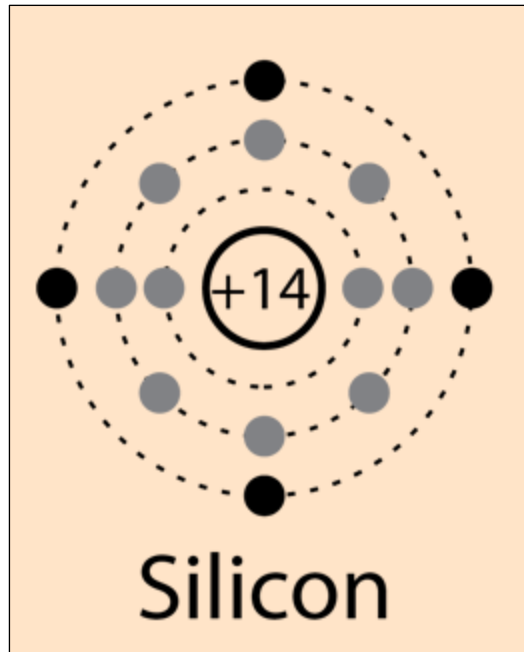
52. JinkoSolar has purposefully and voluntarily placed, and is continuing to place, products that contain TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent into the stream of commerce through established distribution channels with the expectation, knowledge and intent that such products, containing TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, will be imported into, offered for sale, sold, purchased and/or used in, Delaware.

53. Venue is proper in this judicial district under 28 U.S.C. §§ 1391(b), 1391(c) and 1400(b).

BACKGROUND ON SOLAR TECHNOLOGY

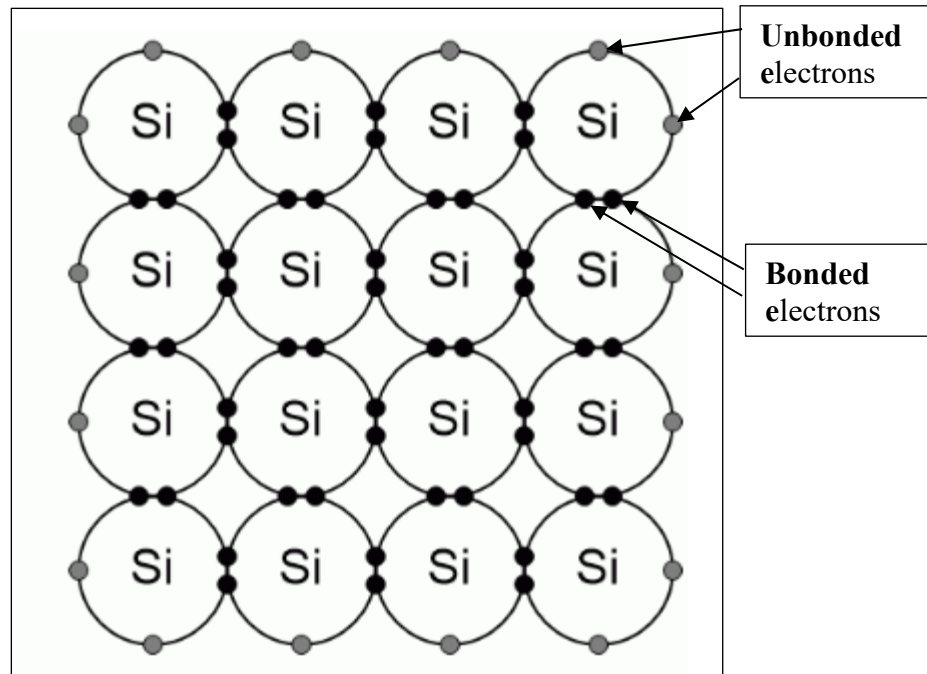
54. Solar technologies convert sunlight into electrical energy. Solar, or photovoltaic ("PV"), cells are devices that can absorb energy from sunlight to create electrical charges, generating electricity. That electricity can be introduced into the electrical grid for immediate use or stored in energy storage devices, such as batteries, for later use. To boost power output, solar cells can be connected together in solar modules.

55. Solar cells are typically small and delicately crafted out of semiconductor materials. One of those materials is silicon, which is incorporated into solar cells as the central base layer or "substrate". Silicon atoms have a central nucleus that is made up of protons (positively charged particles) and neutrons (neutrally charged particles). Electrons (negatively charged particles) orbit around this nucleus in "shells". At a high level, silicon atoms have four "valence" electrons (that is, electrons in the outermost electron shell of the atom), as shown by the four black circles in the outer ring in the schematic of a silicon atom reproduced below.



(<http://hyperphysics.phy-astr.gsu.edu/hbase/Solids/sili.html>.)

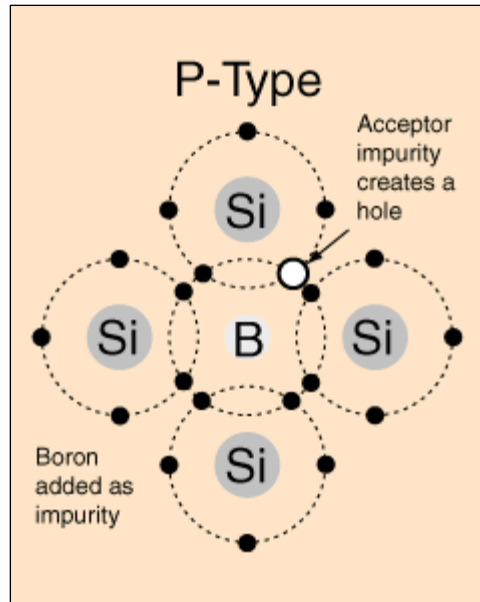
56. Silicon atoms will form a lattice-like structure with other silicon atoms, as shown in the diagram below. The silicon atoms bond by sharing valence electrons, shown in the diagram below as two dark circles between the silicon atoms. This results in a stable structure where the valence band of each silicon atom has eight electrons. However, atoms at the surface or edge of the silicon lattice structure, such as the outer silicon atoms in the diagram, do not have four silicon atoms to bond to, and thus have electrons that are not bound to another silicon atom, depicted in the diagram below as gray circles.



(<https://www.eeweb.com/how-semiconductors-work/> (annotated).)

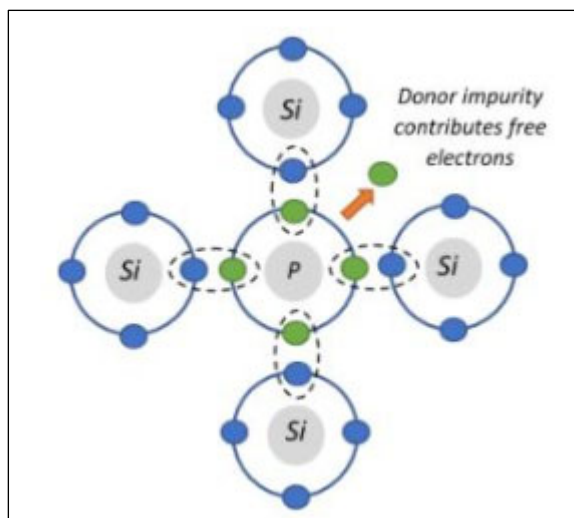
57. In silicon solar cells, there are two layers of silicon: an “N-doped layer” and a “P-doped layer”. P-doped and N-doped refer to the process of “doping”—the addition of impurities into the silicon lattice—with an N-type or P-type dopant. A dopant is a substance that modifies the electrical conductivity of the silicon layer.

58. A P-type dopant, commonly the element boron, has three valence electrons. When a boron atom replaces a silicon atom in the lattice, it leaves a space for an electron because it only has three valence electrons that it may share with neighboring silicon atoms, as shown in the diagram below. The absence of an electron is commonly referred to as a “hole”, which is depicted in the diagram below as a white circle. The “P” in P-type refers to “positive”, because the P-type dopant has extra spaces in the valence shell, or “holes”, and these holes are positive charge carriers. Electrostatic forces will attract electrons to these “holes” to try to fill the valence shell.



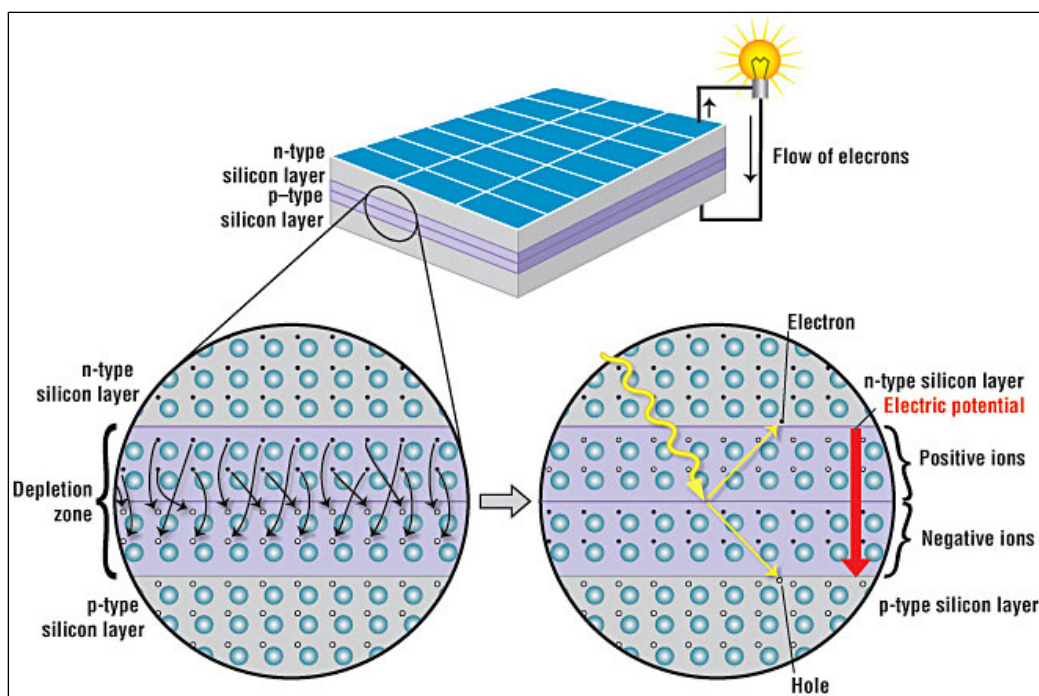
(<http://hyperphysics.phy-astr.gsu.edu/hbase/Solids/dope.html>.)

59. An N-type dopant, commonly the element phosphorus, has five valence electrons. The “N” in N-type refers to “negative”, because the N-type dopant has extra electrons that are negative charge carriers. When a phosphorus atom replaces a silicon atom in the lattice, it has an extra electron that is not bonded to an adjacent silicon atom. The fifth valence electron of the phosphorus atom is easily energized or “excited”, which causes it to become a “free” electron. Such a free electron is shown in the diagram below as the green circle that is not located within any valence shell. Once free electrons are created, the valence shell will contain eight electrons, which is a stable configuration. The free electrons may move and become a part of the electric current.



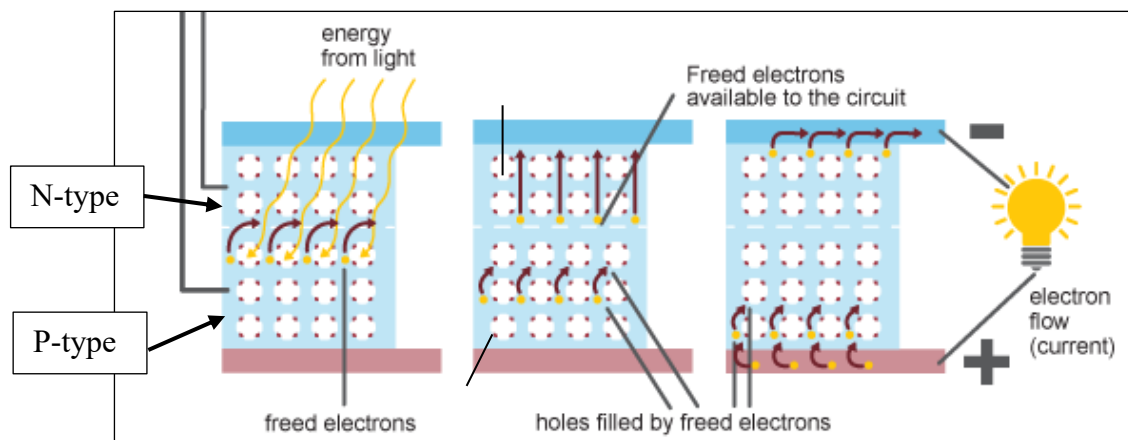
(<https://www.vedantu.com/question-answer/an-ntype-and-ptype-silicon-can-be-obtained-by-class-12-physics-cbse-5f9202bf146d684d25783a73>.)

60. When P-doped and N-doped silicon layers are put into contact, free electrons are able to move from the N-doped layer to the P-doped layer, where they settle in the holes in the P-doped layer, as shown by the red line in the diagram below, forming what is known as a “p-n junction” at the interface between the two layers.



(<https://www.acs.org/education/chemmatters/past-issues/archive-2013-2014/how-a-solar-cell-works.html>.)

61. At the center of the p-n junction is a “depletion zone” that is made up of negatively charged P-doped silicon (where the holes in the dopant have been filled with free electrons) and positively charged N-doped silicon (where the dopant has expelled its free electrons). In traditional solar cells, this p-n junction is on the front surface of the silicon substrate, and a metal layer is applied to the back surface of the silicon substrate to serve as an electrical contact or “electrode”. When a solar cell constructed like this is exposed to the sun, energy from sunlight excites electrons in the N-type and P-type regions, as well as in the depletion zone. When electrons become excited, they are knocked free from their atoms and flow through the solar cell as electrical current to the electrodes incorporated into the cell, and ultimately into the electrical grid or an energy storage device.



(<https://www.eia.gov/energyexplained/solar/photovoltaics-and-electricity.php> (annotated).)

62. Electricity is generated because the free electrons diffuse within the silicon substrate and are eventually pushed by the electrical field of the depletion zone toward the electrodes (similar to a magnet) and flow in that direction, as shown in the leftmost and middle images in the diagram above (where the N-type silicon layer is on top of the P-type silicon layer). The electrons are pushed through the N-type silicon layer along with additional excited electrons to the first electrodes (the blue rectangle at the top, in the diagram above). The movement of the

electrons from the N-type silicon layer causes a positive charge as the N-type silicon layer loses electrons. To complete the circuit and ensure that the device stays charge-neutral, electrons enter from the other electrode (red rectangle at the bottom of the diagram above) to flow through the circuit, as shown in the rightmost image, through the depletion zone and then the N-type silicon layer. While sunlight continues to hit the solar cell, electrons continuously flow along this path forming an electrical current.

63. One problem with this approach is that significant amounts of free electrons excited by sunlight will recombine into silicon atoms in the substrate that have lost electrons, typically at the outer surfaces of the silicon substrate where there are unbonded electrons (as described above) and holes. This “recombination” of electrons into silicon atoms weakens the available electric current by reducing the flow of free electrons to an electrode. Solar cells use various methods to reduce this recombination so that more electrons can be directed to an electrode to form a stronger electrical current and increase the efficiency of the solar module.

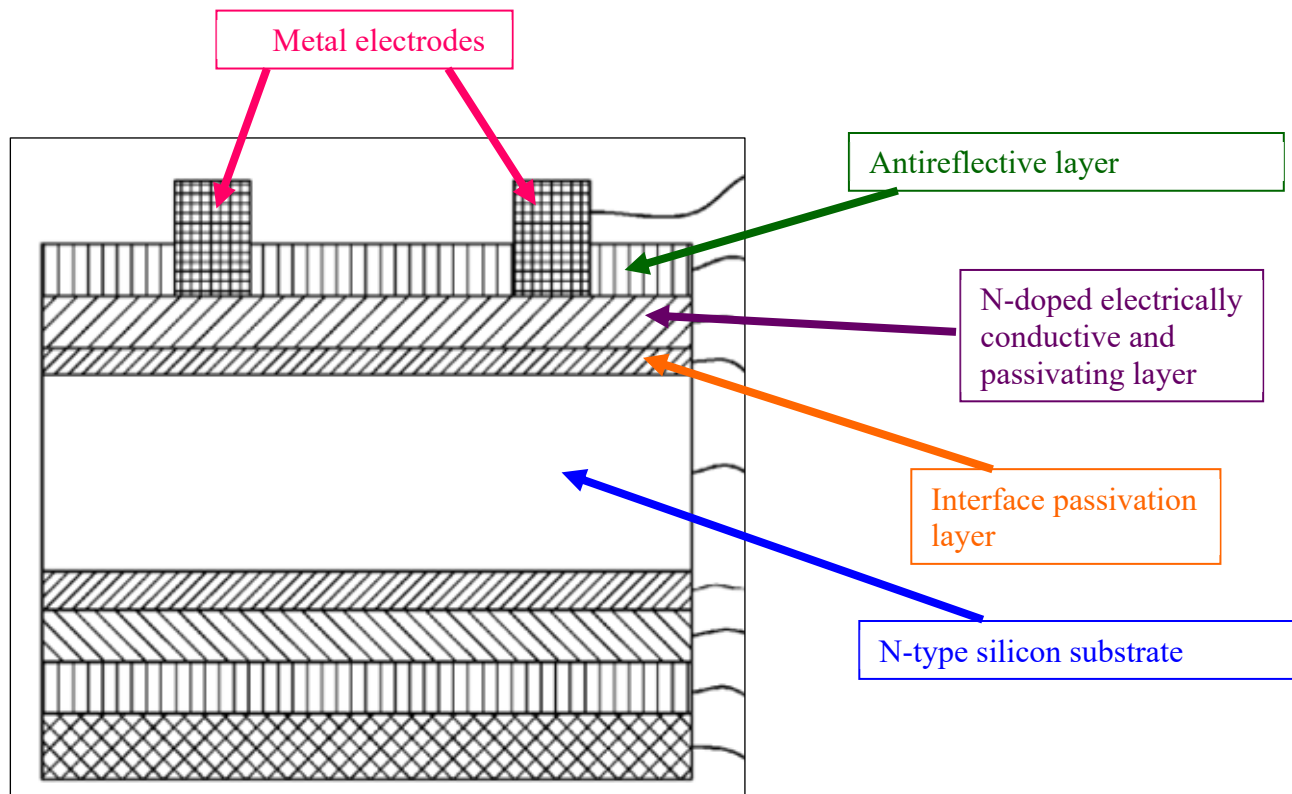
64. One of the ways solar cells are designed to reduce recombination is through “passivation”, which is the reduction in the reactivity of a material. In solar cells, the surfaces of the silicon substrate can be passivated with a different material (often silicon dioxide or silicon nitride) to reduce the occurrence of recombination along the surface of the substrate. This surface passivation layer bonds to the unbonded silicon electrons on the surface of the silicon, eliminating holes that would otherwise attract the free electrons. This suppression of the recombination of electrons and holes at or near the physical surfaces of the silicon substrate increases the efficiency of the solar cell by increasing the electric current and voltage.

THE PATENTED TECHNOLOGY

65. The '074 Patent is entitled "High-Efficiency Solar Cell Structures and Methods of Manufacture". Its inventors are Oliver Schultz-Wittmann and Denis DeCeuster. The application for the '074 Patent was filed on November 15, 2011, and claims priority to provisional patent application number 61/171,194, filed on April 21, 2009. The '074 patent was issued on September 8, 2015. A true and correct copy of the '074 Patent is attached as Exhibit A.

66. The claimed methods of the '074 Patent improve both upon the manufacturing efficiency and performance of solar cells, particularly TOPCon solar cells. As recited in claim 1, the inventive method of manufacturing solar cells generally involves providing a silicon wafer as a central substrate, depositing or growing an interface passivation layer (or "tunneling layer") onto the substrate, and depositing a doped conductive and passivating layer on the interface passivation layer. This assembly of layers is heat-treated at a temperature of about 500 °C or higher, which facilitates diffusion of the dopant material from the conductive and passivating layer through the interface passivation layer.

67. The claimed steps of depositing or growing an interface passivation layer on the substrate and depositing a doped conductive and passivating silicon layer on the passivation layer, and then heat-treating these layers, results in a structure, a non-limiting illustration of which is shown in the diagram below, that reduces electron recombination and increases the conductivity of electrons.



('074 Patent, Fig. 8 (annotated).)

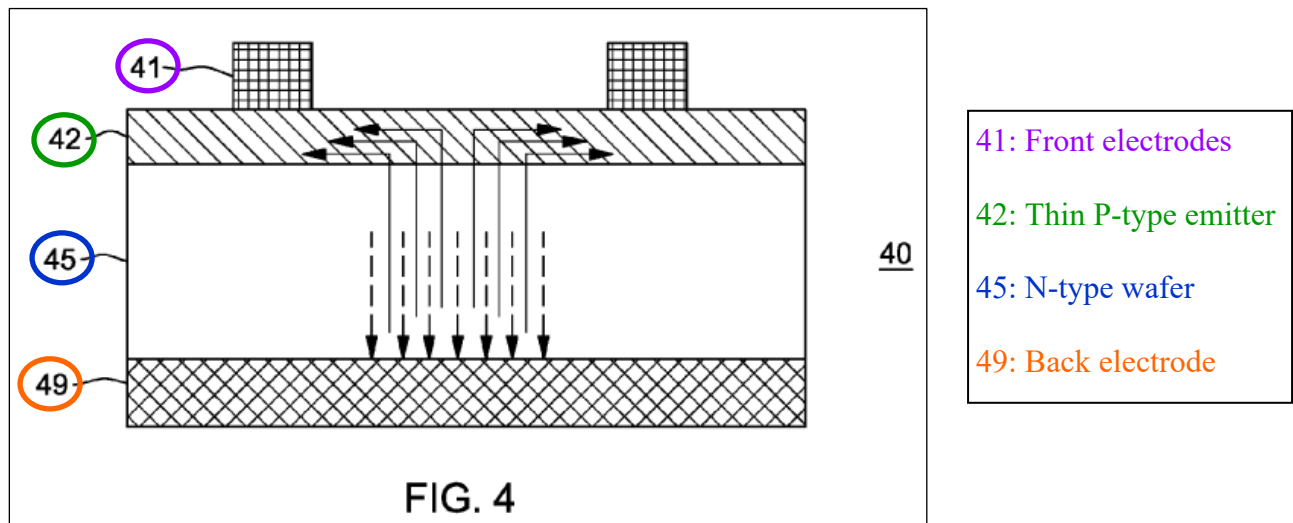
68. In this exemplary embodiment, the N-doped electrically conductive and passivating silicon layer allows electrons to move between the N-type substrate and the metal electrodes. The interface passivating layer between the conductive and passivating layer and the silicon substrate “coats” the back surface of the substrate to reduce recombination at that surface. The interface passivation layer is also referred to as a “tunneling layer” because it is thin enough that excited electrons can “tunnel” through the layer. This tunneling ability is necessary because the interface passivation layer is made of an electrically insulating material, silicon oxide for example, so, without the tunneling effect, electrons could not flow between the back electrodes and the silicon substrate through the silicon oxide.

69. The back surface passivation, a result of depositing or growing an interface passivation layer over the silicon substrate as claimed in the '074 Patent, results in improved bifaciality—meaning that the solar cells are able to generate more power from sunlight absorbed from the back side of the solar cell (the side facing away from the sun). This is possible because the interface passivation layer bonds to unbonded electrons at the back surface of the substrate, preventing recombination of electrons at the back surface.

70. As noted above, one of the steps of the methods claimed by the '074 Patent is providing thermal treatment to the assembly comprising the central silicon substrate, the conductive and passivating layer, and the interface passivation layer. This thermal treatment facilitates diffusion of the N-dopant material through the interface passivation layer and, in some embodiments, into the silicon substrate. That diffusion of dopant provides pathways from the silicon substrate to the electrodes along which the electrons travel, thereby effectively shortening the path the electrons must take through the substrate to reach the electrodes. These pathways are formed because the areas of the substrate into which dopant is diffused have orders of magnitude more dopant than the other portions of the substrate. These higher levels of dopant result in higher conductivity.

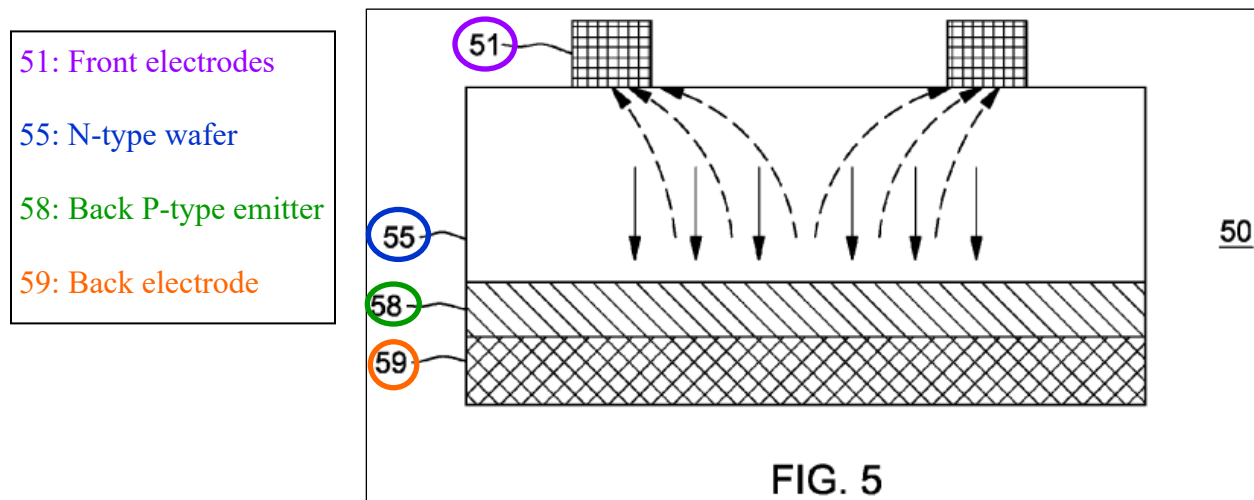
71. The general concept of shortened charge carrier flow paths is illustrated by comparing Figures 4 and 5 of the '074 Patent. When an electron is “excited”, the energy can cause it to move away from its current atom and take the path of least resistance to the electrodes. Figure 4, reproduced below with annotations, shows a solar cell wherein the silicon substrate (45) is less conductive than the doped emitter layer (42). Because the silicon substrate is poorly conductive (and thus highly resistive) compared to the emitter layer, the path of least resistance to the electrodes is vertically through the silicon substrate and laterally through the emitter layer, as

illustrated by the solid lines in the diagram below, even though the overall distance is longer compared to a path through the silicon substrate directly toward the electrodes.



('074 Patent, Fig. 4 (annotated).)

72. Figure 5, reproduced below with annotations, shows a solar cell that does not have a highly conductive, heavily doped emitter layer between the silicon substrate (55) and the electrodes (51), and thus the charge flow path in Figure 5 does not travel through a region where the conductivity varies as significantly as the region illustrated in Figure 4. Because of this, the path of least resistance in Figure 5 is the shortest path to the electrodes, and thus the charges take a shortened, curved path between the electrodes and the substrate as represented by the dashed lines.



('074 Patent, Fig. 5 (annotated).)

73. As noted above, using the thermal treatment step claimed in the '074 Patent results in diffusion of the dopant through the interface passivation layer and, in some embodiments, into the silicon substrate. The areas where the dopant, *e.g.*, phosphorus, is incorporated into the interface passivation layer and, in some embodiments, the substrate makes the silicon in those areas more conductive and forms low resistance pathways through those layers along which electrons can more easily travel. The diffusion of dopant into these layers thus increases the conductivity of the solar cell near the back surface of the silicon substrate, *i.e.*, through the interface passivation layer, such that its conductivity is more similar to the conductivity of the conductive and passivating layer. As a result, charges take a more direct route from the substrate toward the electrodes affixed to the back of the solar cell than they otherwise would without the diffusion of the dopant, similar in concept to that which is shown in Figure 5.

74. The diffusion of the dopant through the interface passivation layer further forms a junction between the doped conductive and passivating layer and the relatively lower doped silicon substrate. This “high-low junction” further reduces recombination by creating an electrical field around the back side surface of the silicon substrate, which acts to push electrons

through the solar cell, thus decreasing instances of recombination. The diffusion of phosphorus through the interface passivation layer has the added benefit of making tunneling therethrough more efficient.

75. In addition to reducing recombination by providing pathways through the solar cell via the diffusion of dopant, the claimed methods allow for electricity to flow between the electrodes and the substrate through the conductive and passivating layer rather than requiring direct contact between the electrodes and the substrate. Accordingly, the claimed method eliminates the cost and labor of forming a direct metal connection from the electrode to the back surface of the substrate, such as by etching down to the substrate or firing or melting metal all the way through the conductive and passivating layer and interface passivation layer to the substrate.

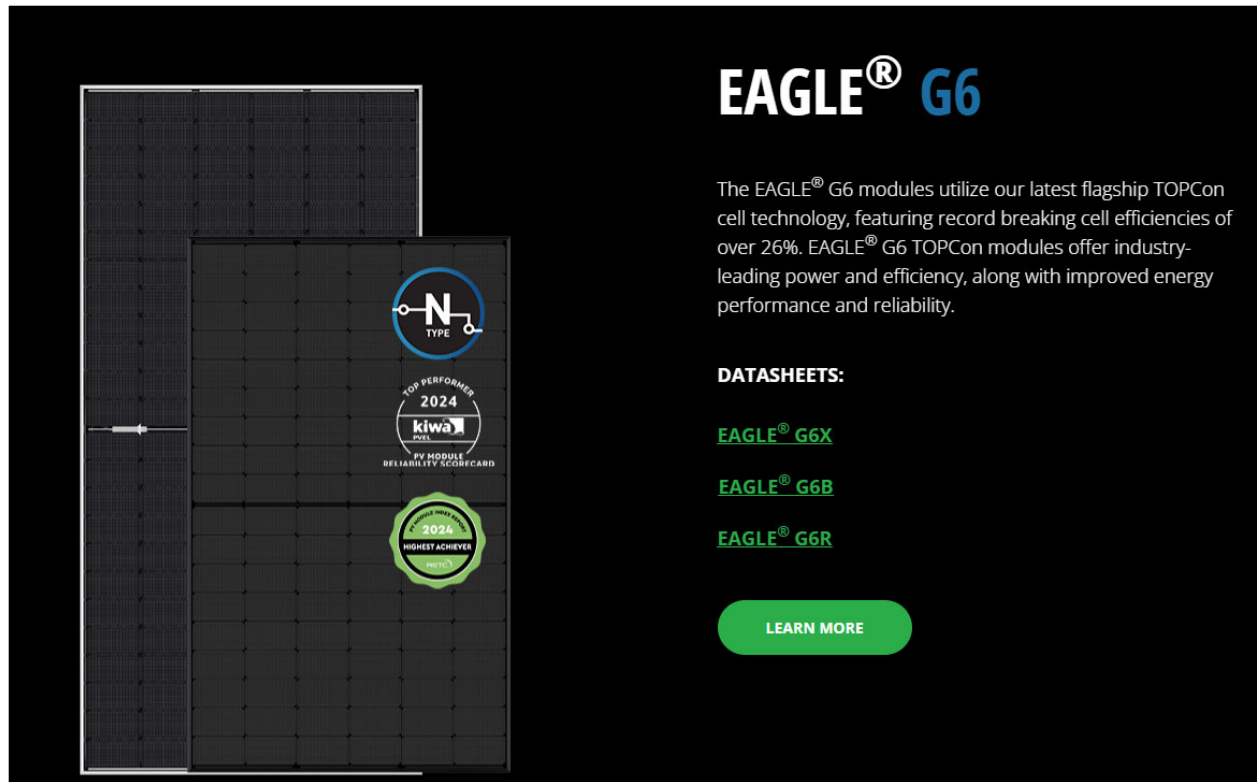
THE INFRINGING PRODUCTS

76. JinkoSolar manufactures solar cells by using methods claimed by the '074 Patent. JinkoSolar incorporates those TOPCon solar cells into TOPCon solar modules that are sold to consumers. JinkoSolar's TOPCon solar modules (collectively, the "JinkoSolar TOPCon products" or the "Infringing Products") include, for example, the Eagle, Tiger Neo and Neo Green lines. These products use and incorporate the same, or substantially similar, infringing TOPCon solar cells. Accordingly, the products analyzed below are representative of JinkoSolar's full offering of infringing TOPCon products.

77. JinkoSolar provides data sheets and installation manuals for products in the Eagle line (*e.g.*, <https://jinkosolar.us/wp-content/uploads/2025/02/202501-UL-61730-Installation-Manual-G5-G6-G7.pdf>; <https://jinkosolar.us/wp-content/uploads/2024/06/202406-UL-61730-Installation-Manual-G5-G6.pdf>), and Tiger Neo and Neo Green lines (*e.g.*,

https://jinkosolarcdn.shwebSPACE.com/uploads/JinkoSolar%20Global%20Installation%20Manual_202412_A1.2.pdf).

78. JinkoSolar’s **Eagle** solar modules incorporate TOPCon solar cells. The screenshot below, taken from JinkoSolar’s website, states: “The EAGLE® G6 modules utilize our latest flagship TOPCon cell technology”.



(<https://jinkosolar.us/eagle-modules/>.)

79. Non-limiting examples of JinkoSolar’s Eagle solar modules that utilize TOPCon solar cells are the Eagle G6X, Eagle G6B and Eagle G6R. Representative examples of data sheets for these solar modules tout “N-Type Technology”, “Jinko’s in-house TOPCon technology”, and “[b]etter performance and improved reliability”, as shown in the highlighted portions in the below screenshots.



EAGLE[®] MODULES

THE MOST DEPENDABLE SOLAR PRODUCT

EAGLE[®] G6X
580-600 WATT • EXTREME WEATHER SOLUTION
 Positive power tolerance of 0~+3%

- NYSE-listed since 2010, Bloomberg Tier 1 manufacturer
- Top performance in the strictest 3rd party labs
- Automated manufacturing utilizing artificial intelligence
- Vertically integrated, tight controls on quality
- Premium solar factories in USA and Vietnam

KEY FEATURES

- Highest Hail Resistance**
 Unique module construction featuring EAGLE[®] Talon Glass™
 Tested and certified to withstand hail strikes of up to 55mm
- N-Type Technology**
 Jinko's in-house TOPCon technology
 Better performance and improved reliability
- Enhanced Mechanical Strength**
 Tested and certified to withstand:
 6000 PA front side max static test load
 5400 PA rear side max static test load
- Highest Fire Rating**
 Fire Type 30 (UL) and Class A (IEC)

• ISO9001:2015 Quality Standards
 • ISO14001:2015 Environmental Standards
 • IEC61215, IEC61730 certified products


• ISO45001: 2018 Occupational Health & Safety Standards
 • UL61730 certified products

TÜV SÜD CE IEC C UL US LISTED

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Jinko Solar

(<https://jinkosolar.us/wp-content/uploads/2024/09/30mm-EAGLE-G6X-JKM580-600N-72HL4-BDX-F30R-F2-US.pdf> (highlighting added).)




EAGLE[®] MODULES

THE MOST DEPENDABLE SOLAR PRODUCT







EAGLE[®] G6B

580-600 WATT • N-TYPE BIFACIAL
Positive power tolerance of 0~+3%



- NYSE-listed since 2010, Bloomberg Tier 1 manufacturer
- Top performance in the strictest 3rd party labs
- Automated manufacturing utilizing artificial intelligence
- Vertically integrated, tight controls on quality
- Premium solar factories in USA and Vietnam



KEY FEATURES

 N-Type Technology N-type cells offer Jinko's in-house TOPCon technology with better performance and improved reliability.	 Industrial Grade Construction Fire Type 29 with optimized dual-glass construction and aluminum frame for highest mechanical load resistance.
 Multi Busbar Half Cell Technology Better light trapping and current collection to improve module power output and reliability.	 Shade Tolerant Twin array design allows continued performance even with shading by trees or debris.
 Bifacial Power Gain N-Type architecture increases bifaciality for higher backside bonus and better lifetime yield.	 Protected Against All Environments Certified to withstand humidity, heat, rain, marine environments, wind, hailstorms, and packed snow.
 Low Temperature Coefficient Best in class temperature coefficient for highest lifetime energy yield in all climates.	 Warranty 12-year product and 30-year linear power warranty.

• ISO9001:2015 Quality Standards
 • ISO14001:2015 Environmental Standards
 • IEC61215, IEC61730 certified products

• ISO45001:2018 Occupational Health & Safety Standards
 • UL61730 certified products

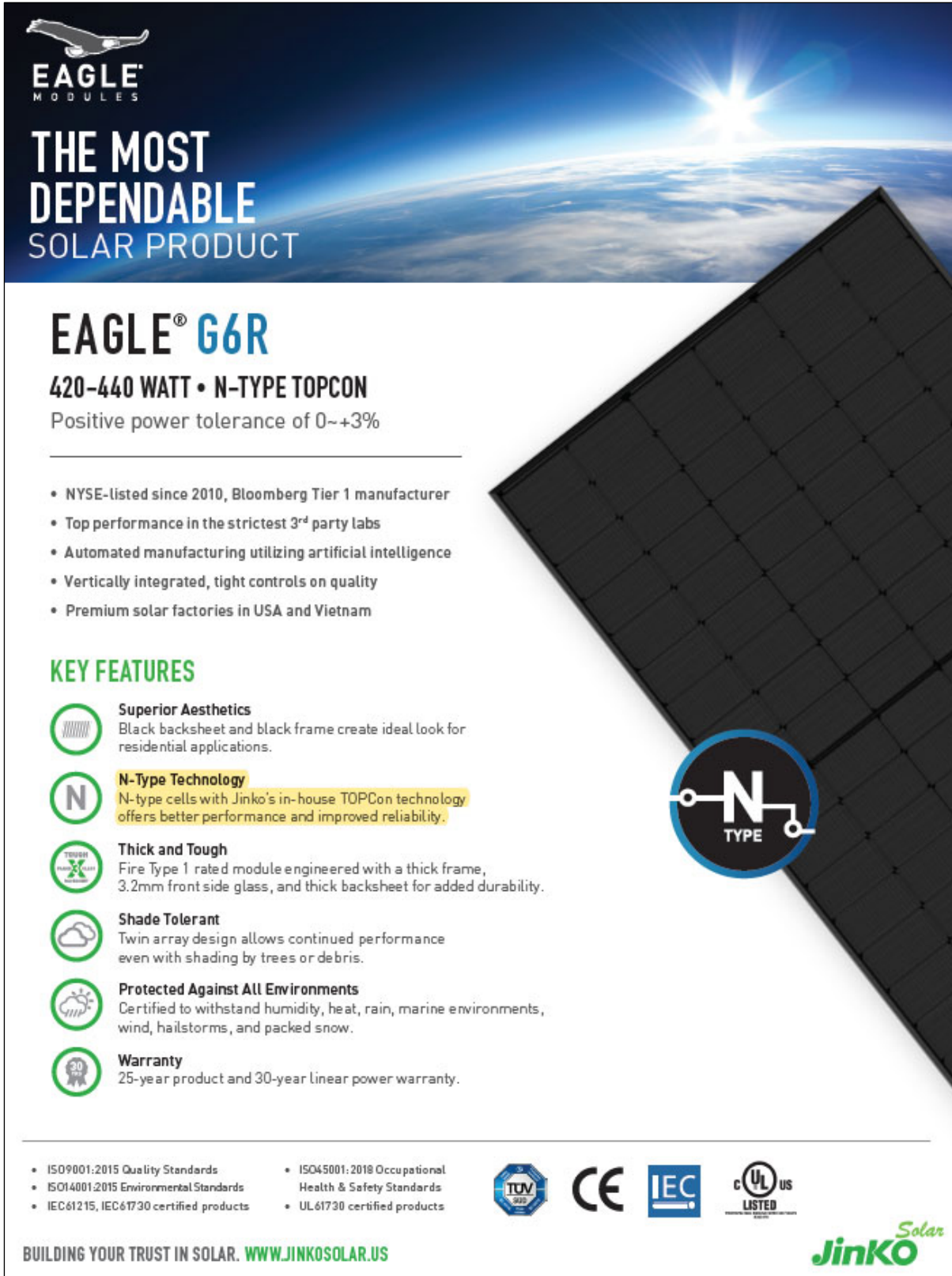


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Jinko^{Solar}

(<https://jinkosolar.us/wp-content/uploads/2024/09/30mm-EAGLE-G6B-JKM580-600N-72HL4-BDV-F30R-F2-US.pdf> (highlighting added).)



EAGLE[®] MODULES

THE MOST DEPENDABLE SOLAR PRODUCT

EAGLE[®] G6R

420-440 WATT • N-TYPE TOPCON
Positive power tolerance of 0~+3%

- NYSE-listed since 2010, Bloomberg Tier 1 manufacturer
- Top performance in the strictest 3rd party labs
- Automated manufacturing utilizing artificial intelligence
- Vertically integrated, tight controls on quality
- Premium solar factories in USA and Vietnam

KEY FEATURES

- Superior Aesthetics**
Black backsheet and black frame create ideal look for residential applications.
- N-Type Technology**
N-type cells with Jinko's in-house TOPCon technology offers better performance and improved reliability.
- Thick and Tough**
Fire Type 1 rated module engineered with a thick frame, 3.2mm front side glass, and thick backsheet for added durability.
- Shade Tolerant**
Twin array design allows continued performance even with shading by trees or debris.
- Protected Against All Environments**
Certified to withstand humidity, heat, rain, marine environments, wind, hailstorms, and packed snow.
- Warranty**
25-year product and 30-year linear power warranty.

ISO 9001:2015 Quality Standards • **ISO 45001:2018 Occupational Health & Safety Standards**
ISO 14001:2015 Environmental Standards • **UL 61730 certified products**

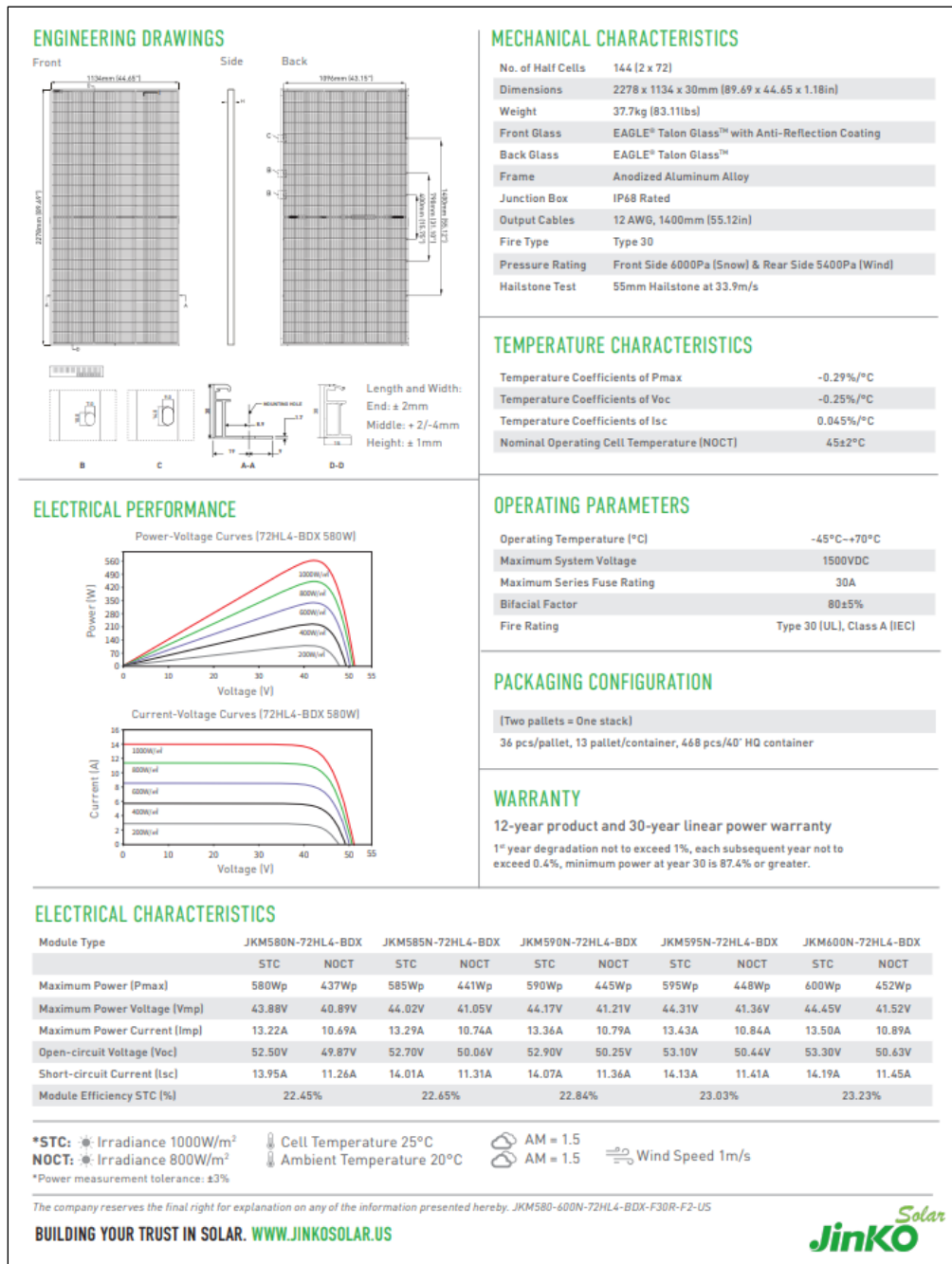
CE **IEC** **UL LISTED**

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Jinko Solar

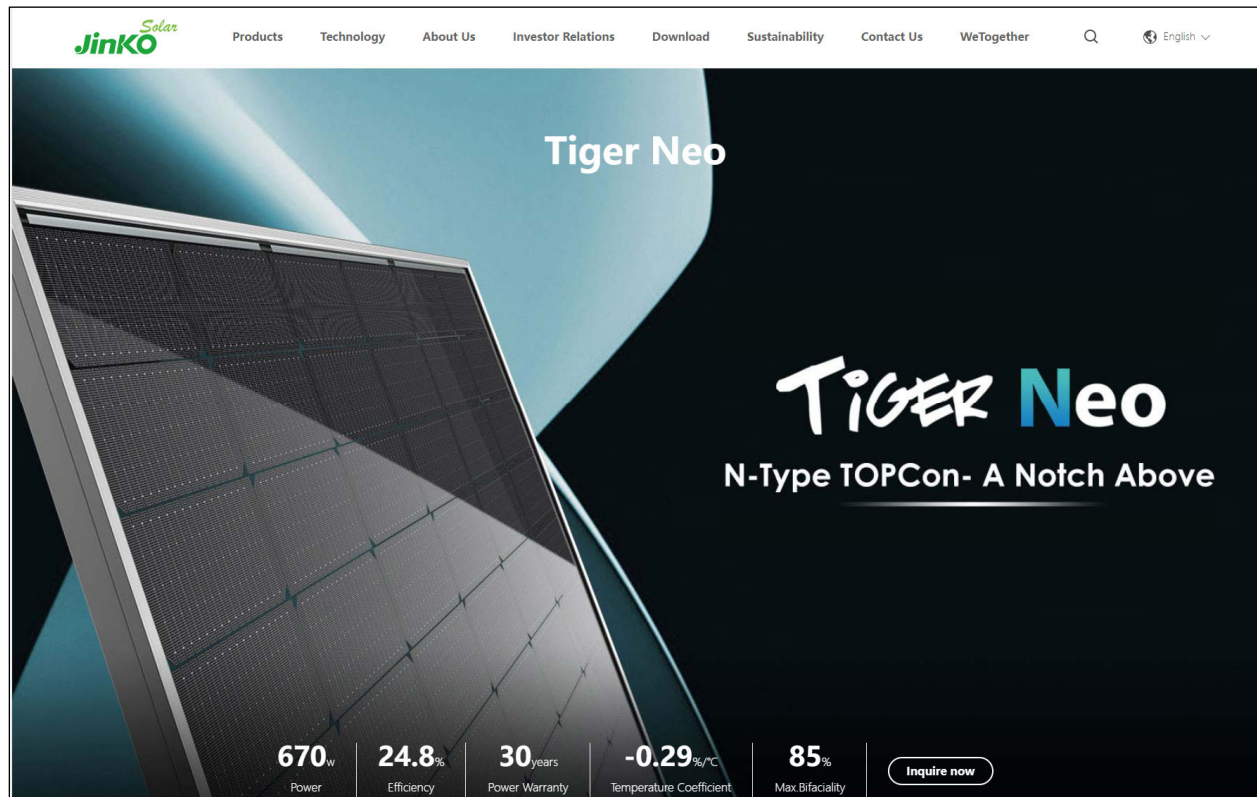
(<https://jinkosolar.us/wp-content/uploads/2023/08/EAGLE-G6R-JKM420-440N-54HL4-B-F4-US-1.pdf> (highlighting added).)

80. JinkoSolar provides product specification information for its Eagle line of TOPCon solar modules. A representative example of this information, for JinkoSolar's Eagle G6X, is shown in the screenshot below from JinkoSolar's website.



(<https://jinkosolar.us/wp-content/uploads/2024/09/30mm-EAGLE-G6X-JKM580-600N-72HL4-BDX-F30R-F2-US.pdf>)

81. JinkoSolar's **Tiger Neo** solar modules utilize TOPCon solar cells. The screenshot below from JinkoSolar's website describes the Tiger Neo modules as being "N-Type TOPCon- A Notch Above".



(<https://www.jinkosolar.com/en/site/tigerneo>.)

82. Non-limiting examples of JinkoSolar's Tiger Neo solar modules that use TOPCon solar cells are the Tiger Neo Bifacial 54R HC Transparent-Black Dual Glass; Tiger Neo Bifacial 66 HC Dual Glass; Tiger Neo Bifacial 72 HC Dual Glass; Tiger Neo Bifacial 72 Triple Advantage; Tiger Neo Bifacial 78 HC Dual Glass; Tiger Neo Mono 54R HC; Tiger Neo Mono 54R HC All black; Tiger Neo Mono 60 HC; Tiger Neo Mono 66 HC; and Tiger Neo Mono 72 HC, as shown in the yellow circles in the below screenshots taken from JinkoSolar's website (which tout "TOPCon HOT 3.0 Technology").

Tiger Neo (TOPCon)

Tiger Neo Bifacial 54R HC Transparent-Black Dual Glass
TIGER NEO

Tiger Neo Bifacial 66 HC Dual Glass
TIGER NEO

Tiger Neo Bifacial 72 HC Dual Glass
TIGER NEO

Tiger Neo Bifacial 72 Triple Advantage
TIGER NEO

(<https://jinkosolar.eu/products/tiger-neo/> (annotated with yellow circles).)



(<https://jinkosolar.eu/products/tiger-neo/> (annotated with yellow circles).)

83. A representative example of a JinkoSolar Tiger Neo solar module that uses TOPCon solar cells is JinkoSolar's Tiger Neo 66HL4M-BDV (605-630 Watt) Bifacial Module with Dual Glass, which utilizes "N-Type modules with Tunnel Oxide Passivating Contacts (TOPcon) technology".

www.jinkosolar.com

JinkoSolar

TIGER Neo

66HL4M-BDV

605-630 Watt

BIFACIAL MODULE WITH DUAL GLASS

N-type



N-Type Technology

N-type modules with Tunnel Oxide Passivating Contacts (TOPcon) technology offer lower LID/LeTID degradation and better low light performance.

HOT 3.0 Technology

N-type modules with JinkoSolar's HOT 3.0 technology offer better reliability and efficiency.

Dual-Sided Power Generation

Dual-sided power generation gain increases with backside exposure to light, significantly reducing LCOE.

Mechanical Load Enhanced

Certified to withstand:
5400 Pa front side max static test load
2400 Pa rear side max static test load

SMBB Technology

Better light trapping and current collection to improve module power output and reliability.

Anti-PID Guarantee

Minimizes the chance of degradation caused by PID phenomena through optimization of cell production technology and material control.



100%
99%
87.4%

1 10 20 30

12 Year Product Warranty

30 Year Linear Power Warranty

1% First-year Degradation

0.40% Annual Degradation Over 30 Years

- IEC61215:2021 / IEC61730:2023
- IEC61701 / IEC62716 / IEC60068 / IEC62804
- ISO9001:2015: Quality Management System
- ISO14001:2015: Environment Management System
- ISO45001:2018: Occupational health and safety management systems



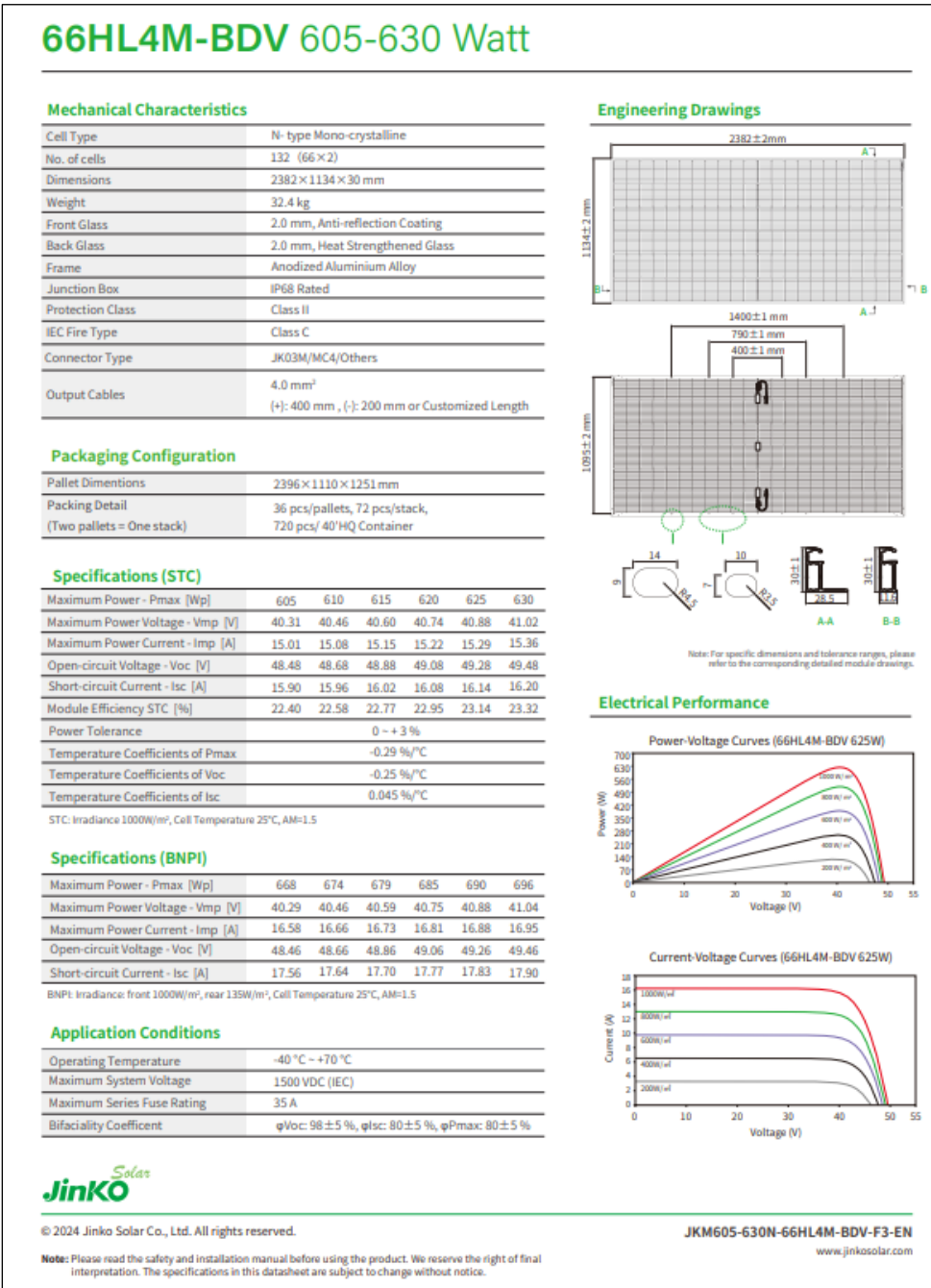





JKM605-630N-66HL4M-BDV-F3-EU

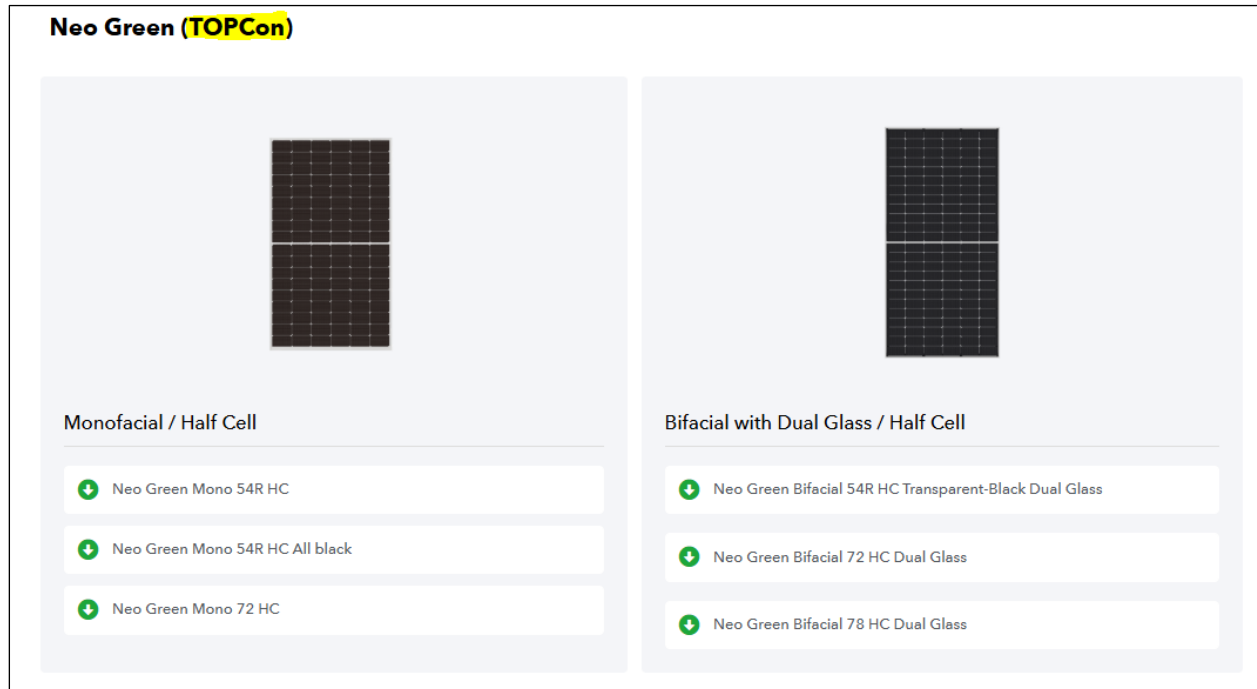
(<https://jinkosolarcdn.shwebspace.com/uploads/JKM605-630N-66HL4M-BDV-F3-EN.pdf> (highlighting added).)

84. JinkoSolar provides product specification information for its Tiger Neo line of solar modules that use TOPCon solar cells. A representative example of this information, for JinkoSolar's Tiger Neo 66HL4M-BDV (605-630 Watt) Bifacial Module with Dual Glass, is shown in the screenshot below from JinkoSolar's website.

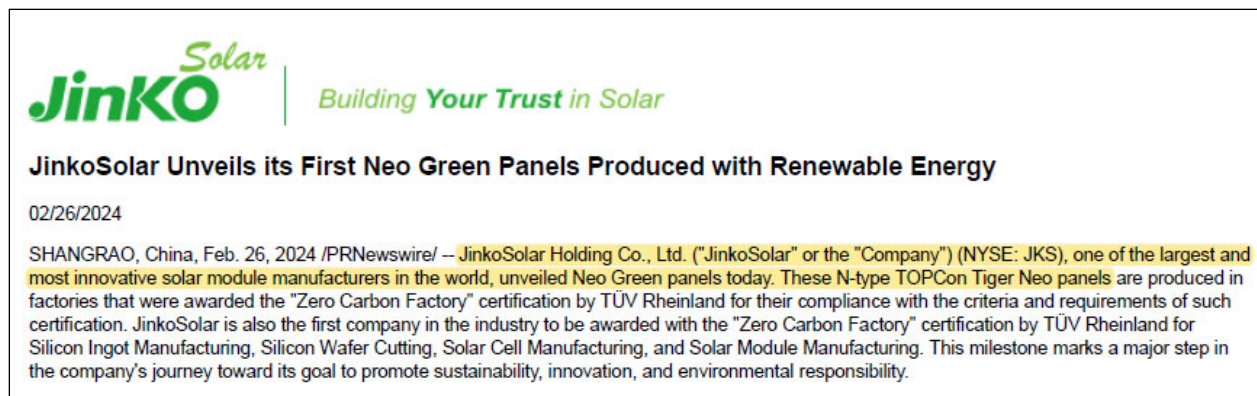


(<https://jinkosolarcdn.shwebspace.com/uploads/JKM605-630N-66HL4M-BDV-F3-EN.pdf>.)

85. JinkoSolar's **Neo Green** solar modules utilize TOPCon solar cells, as shown in the screenshot below from JinkoSolar's website and a February 26, 2024, press release.

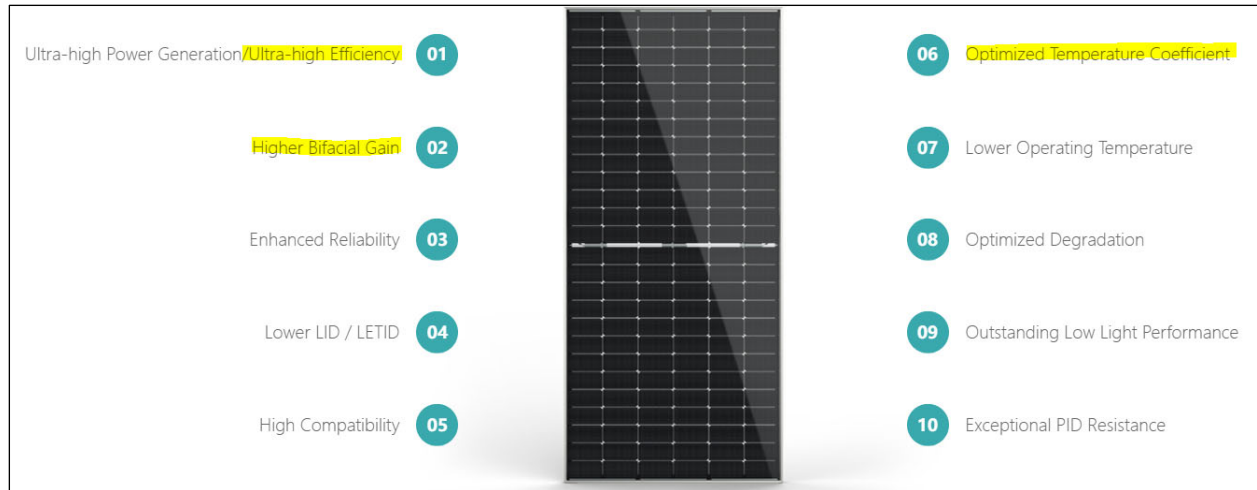


(<https://jinkosolar.eu/downloads/datasheets-neo-green/> (highlighting added).)

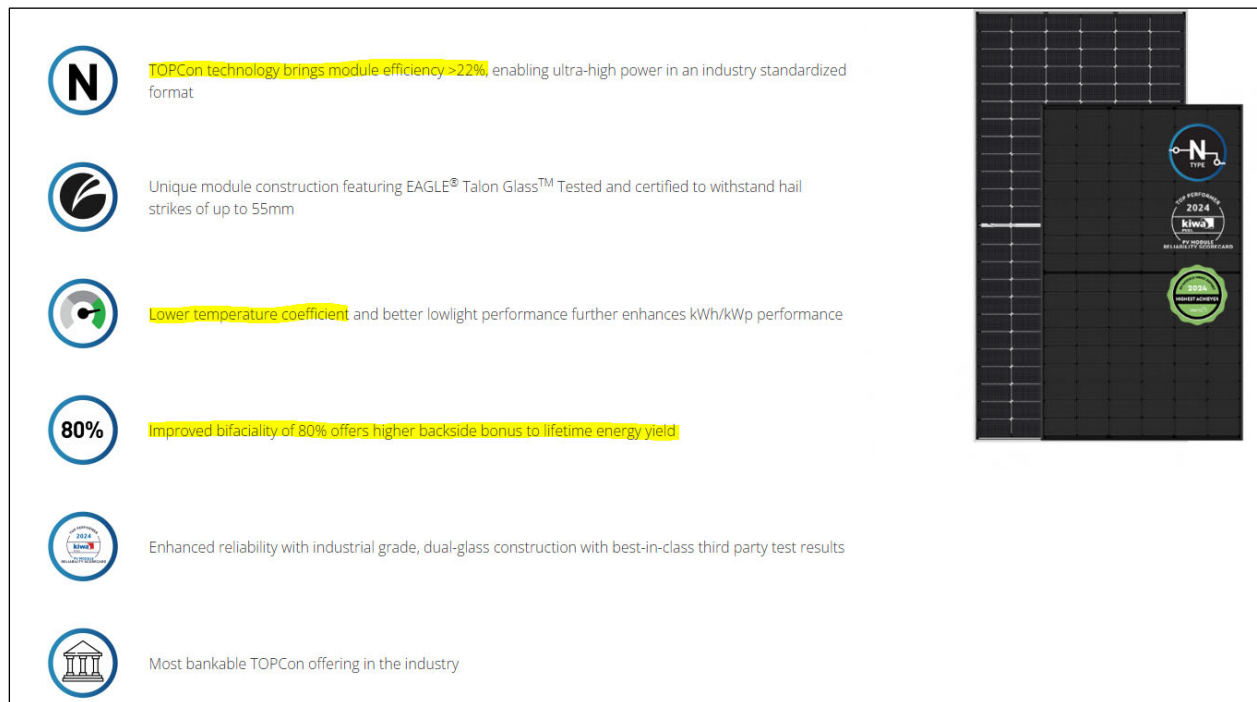


(<https://ir.jinkosolar.com/news-releases/news-release-details/jinkosolar-unveils-its-first-neo-green-panels-produced-renewable> (highlighting added).)

86. JinkoSolar's TOPCon products tout many benefits, including, for example, high efficiency, high bifaciality and optimized temperature coefficients, as shown in the highlighted portions of the screenshot below taken from JinkoSolar's website.

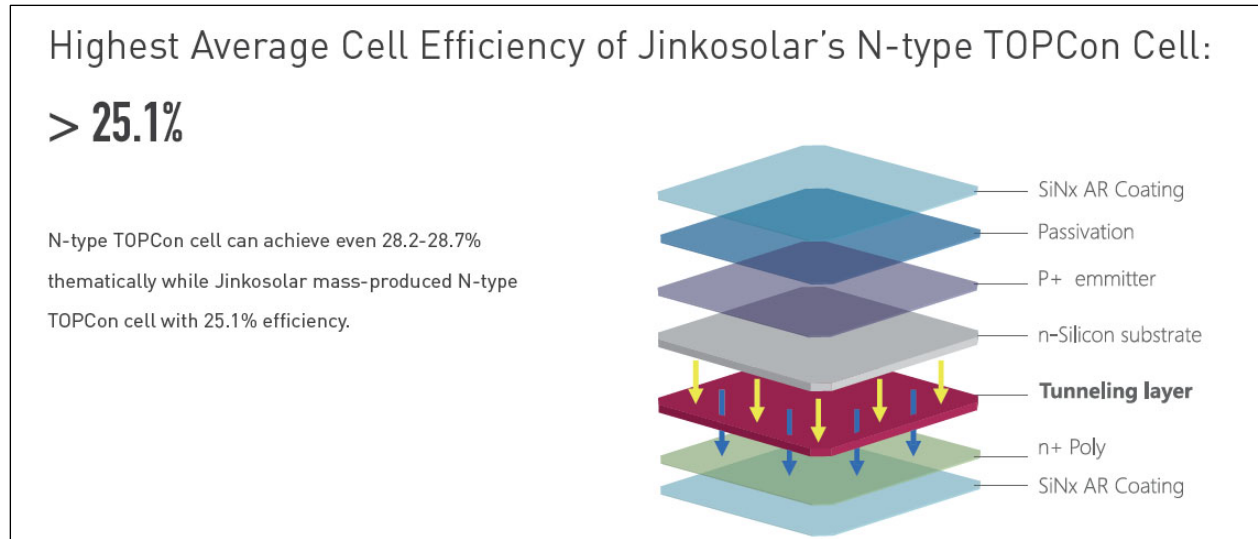


(<https://www.jinkosolar.com/en/site/tigerneo> (highlighting added).)



(<https://jinkosolar.us/eagle-g6/> (highlighting added).)

87. JinkoSolar further touts that its “mass-produced” N-type TOPCon cell has greater than 25.1% efficiency.



(<https://jinkosolar.eu/wp-content/uploads/JinkoSolar-Releases-Product-Whitepaper-of-Tiger-Neo-N-Type-TOPCon-Module.pdf>.)

88. JinkoSolar is able to capture the benefits of TOPCon technology by manufacturing solar cells using the methods claimed by the '074 Patent.

INFRINGEMENT OF U.S. PATENT NO. 9,130,074

86. First Solar is the assignee of the '074 Patent. First Solar has ownership of all substantial rights in the '074 Patent, including the right to exclude others from practicing the inventions of the '074 Patent and to recover damages for infringement of the '074 Patent.

87. The '074 Patent is valid and enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

88. Independent Claim 1 of the '074 Patent recites:

A method of fabricating a solar cell comprising:

providing a wafer as a central substrate;

depositing or growing at least one amorphous interface passivation layer over the substrate;

depositing at least one conductive and passivating layer on the at least one interface passivation layer, the at least one conductive and passivating layer comprising a dopant;

providing thermal treatment at a temperature of about 500° C. or higher, the thermal treatment crystallizing, at least in part, the at least one conductive and passivating layer and facilitating diffusion of the dopant from the at least one conductive and passivating layer through the at least one interface passivation layer; and

providing metallization as electrodes which directly contact the at least one conductive and passivating layer following the thermal treatment thereof, wherein the dopant diffused through the at least one interface passivation layer provides shortened charge carrier flow paths between the substrate and the electrodes through the at least one conductive and passivating layer and the at least one interface passivation layer.

(Ex. A, '074 Patent at 19:14–35.)

89. Dependent Claim 2 of the '074 Patent recites:

The method of claim 1, further comprising depositing at least one antireflective layer, and/or a low reflective index layer forming a good internal mirror on a back of the solar cell.

(Ex. A, '074 Patent at 20:1–4.)

90. Dependent Claim 4 of the '074 Patent recites:

The method of claim 1, wherein the thermal treatment results in perforation of the at least one interface passivation layer to allow carrier transport therethrough.

(Ex. A, '074 Patent at 20:13–15.)

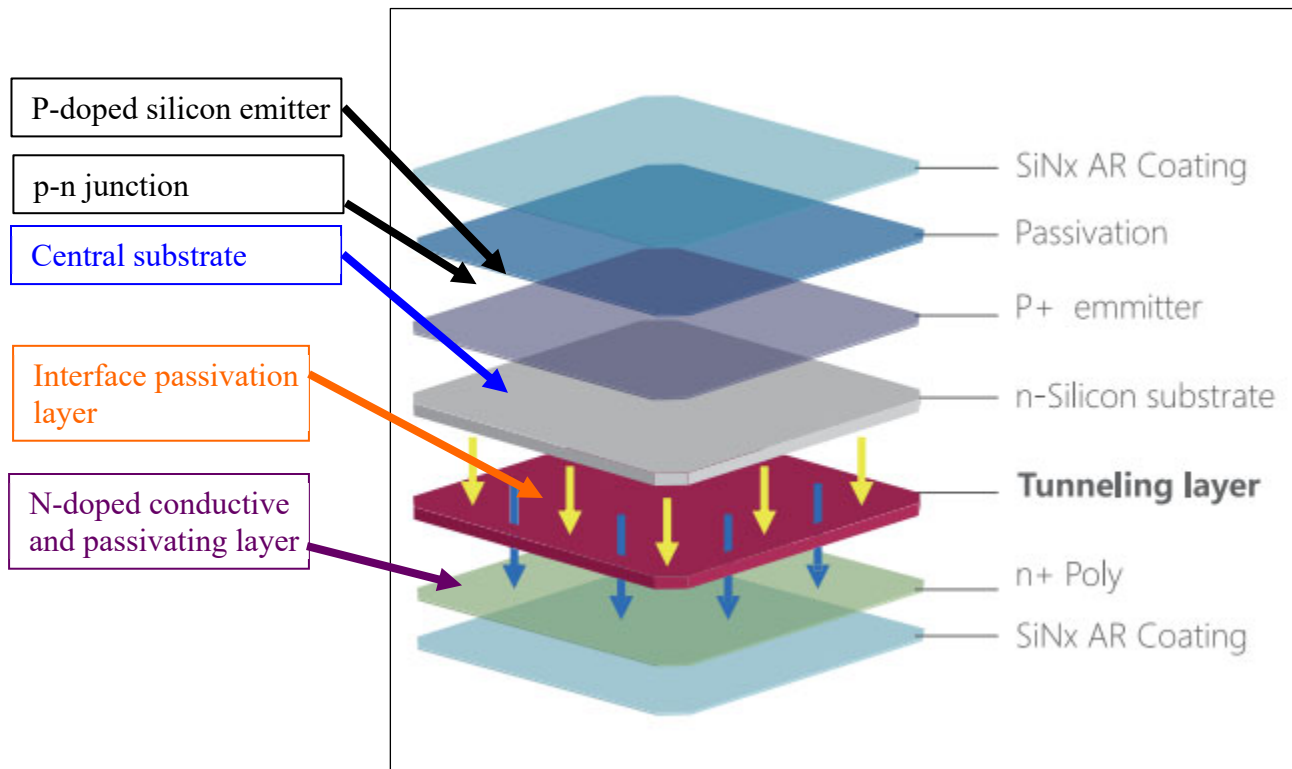
91. Dependent Claim 8 of the '074 Patent recites:

The method of claim 1, wherein the at least one conductive and passivating layer comprises an amorphous, silicon containing compound, and wherein facilitating diffusion of the dopant further comprises facilitating diffusion of dopant atoms into the substrate to provide a high-low junction or a p-n junction.

(Ex. A, '074 Patent at 20:30–35.)

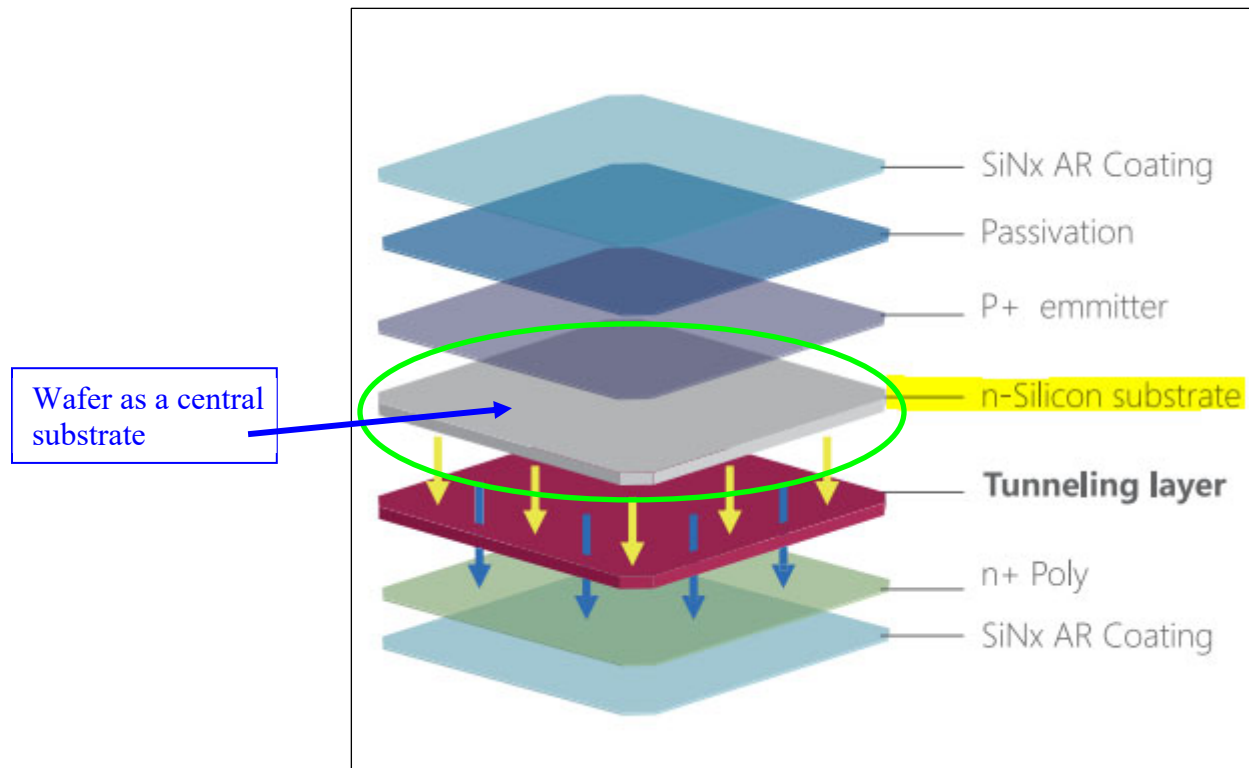
92. JinkoSolar's infringing TOPCon products include a solar cell that is made by the methods claimed by the '074 Patent. This is a schematic of JinkoSolar's TOPCon solar

cell, taken from a JinkoSolar white paper on Tiger Neo N-Type TOPCon Module, annotated to show the layers corresponding to those formed according to Claim 1.

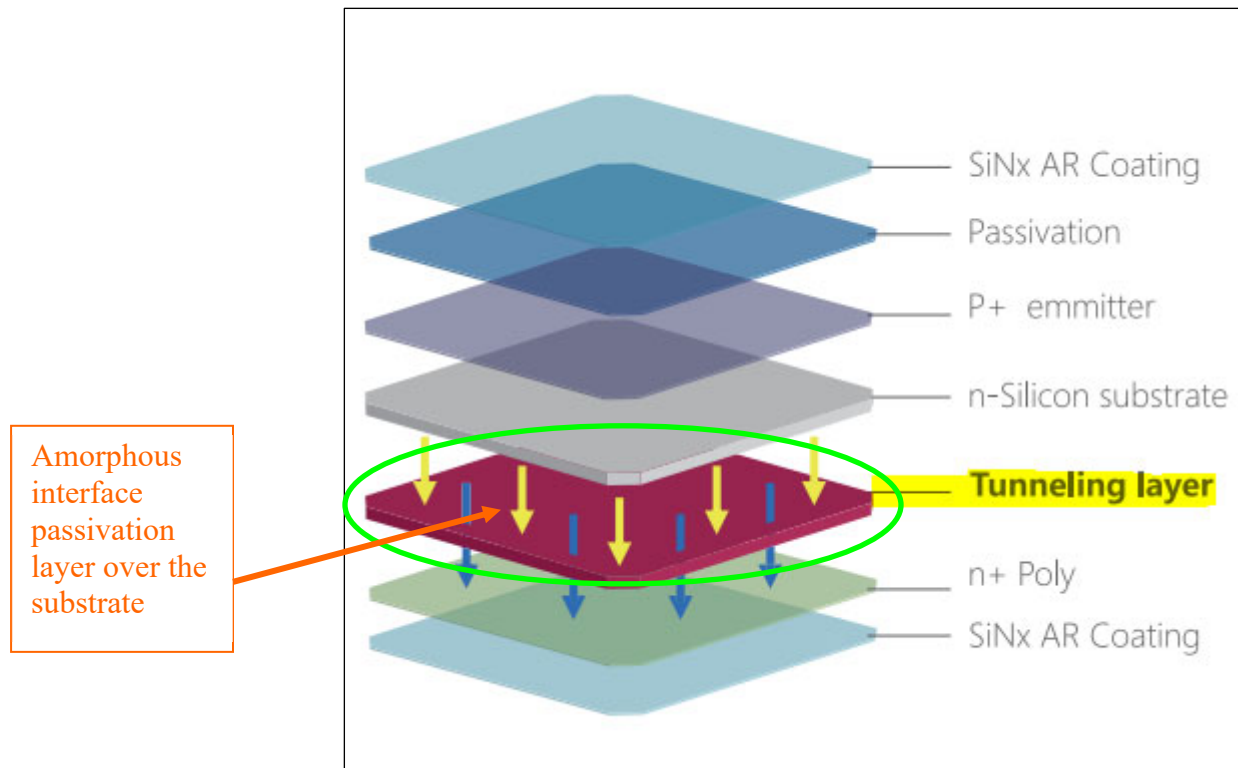


(<https://jinkosolar.eu/wp-content/uploads/JinkoSolar-Releases-Product-Whitepaper-of-Tiger-Neo-N-Type-TOPCon-Module.pdf> (annotated).)

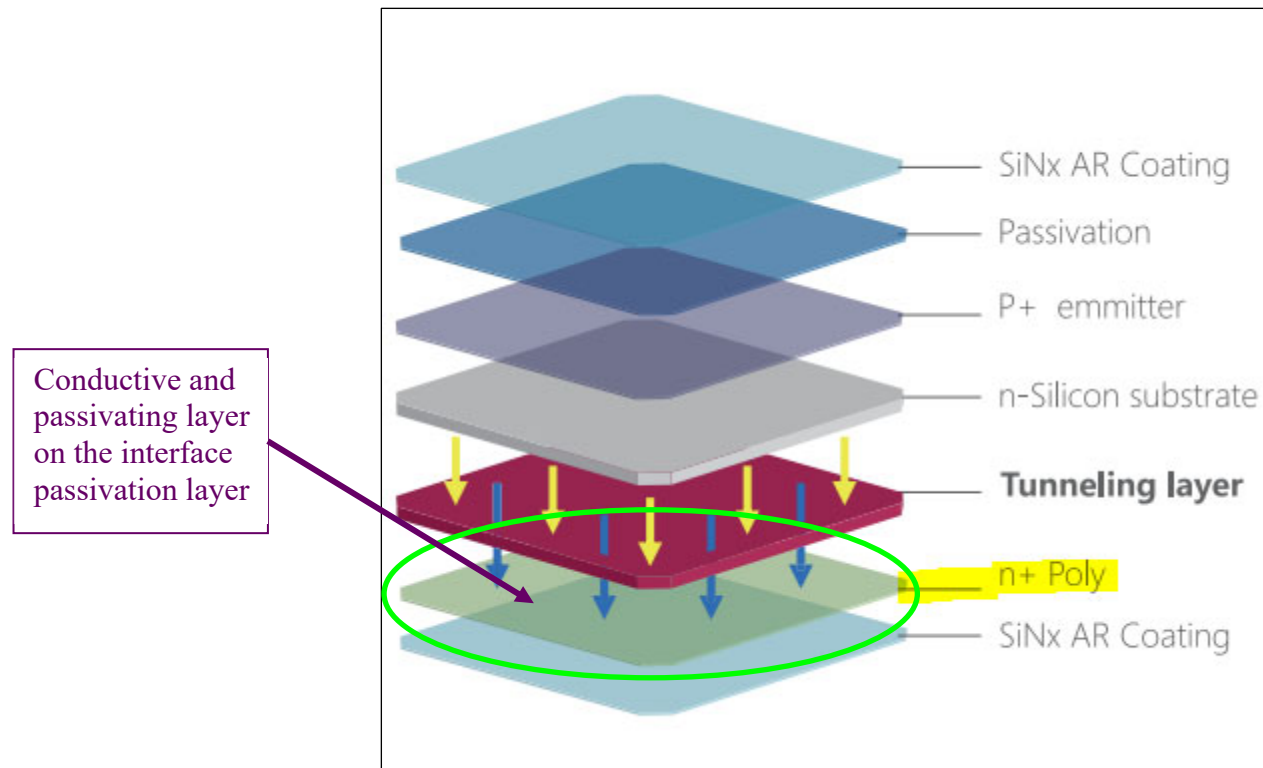
93. “A method of fabricating a solar cell, comprising; providing a wafer as a central substrate”: In manufacturing the Infringing Products, JinkoSolar uses a silicon wafer as a central substrate. In the schematic below, that is the gray-colored layer labeled “n-Silicon substrate”.



94. “depositing or growing at least one amorphous interface passivation layer over the substrate”: JinkoSolar deposits or grows an amorphous interface passivation layer over the silicon substrate. This interface passivation layer in JinkoSolar’s TOPCon products is a layer of amorphous silicon oxide that “coats” the back surface of the substrate to reduce electron recombination. In the annotated schematic below, this interface passivation layer is the red-colored layer labeled “tunneling layer”. “Amorphous” means that the layer does not have a defined crystalline structure of atoms, but instead has silicon atoms that are arranged in a disordered manner, making cells more flexible and able to handle higher temperatures. JinkoSolar refers to this interface passivation layer as a “tunneling layer” because it is sufficiently thin to allow electrons to “tunnel” through it.



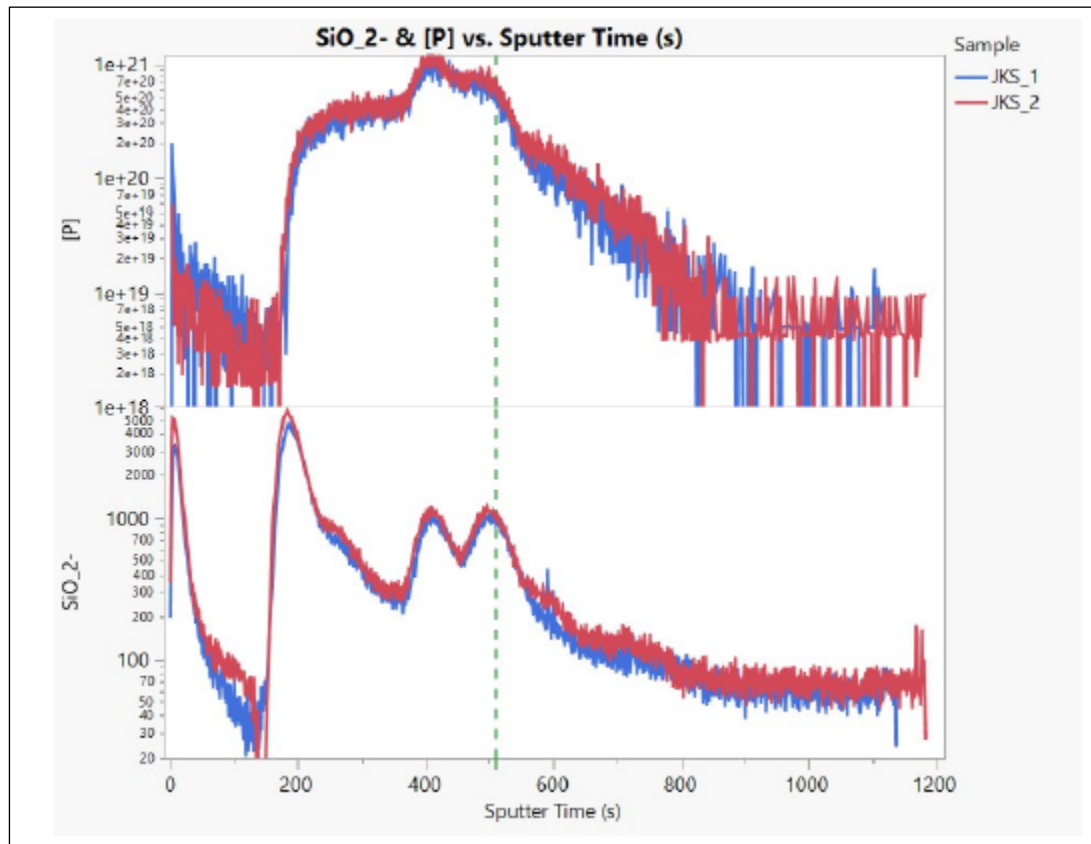
95. “depositing at least one conductive and passivating layer on the at least one interface passivation layer, the at least one conductive and passivating layer comprising a dopant”: JinkoSolar deposits a conductive and passivating layer, the light green “n+ Poly” in the annotated schematic below, on the interface passivation layer (the “tunneling layer”). “Poly” is short for polysilicon and the “n+” means it is (heavily) doped with an N-type dopant. In JinkoSolar’s TOPCon solar cells, the conductive and passivating layer includes phosphorus, which is an N-type dopant.



96. “providing thermal treatment at a temperature of about 500° C. or higher, the thermal treatment crystallizing, at least in part, the at least one conductive and passivating layer and facilitating diffusion of the dopant from the at least one conductive and passivating layer through the at least one interface passivation layer”: JinkoSolar applies a thermal treatment of at least a temperature of about 500 °C. The thermal treatment crystallizes, at least in part, the conductive and passivation layer (the “n+ Poly” in the diagram above). The thermal treatment facilitates the diffusion of the dopant, phosphorus, from the conductive and passivating layer through the interface passivation layer (the “tunneling layer” in the diagram above).

97. Testing of the JinkoSolar TOPCon solar cell shows that, after the heat treatment, the phosphorus dopant has diffused from the conductive and passivating layer (the “n+ Poly”), through the interface passivation layer (the “tunneling layer”), and into the central substrate (the “n-Silicon substrate”). For two JinkoSolar TOPCon cells, the figure below plots, on the y-axis, the amount of phosphorus (top graph) and silicon oxide (bottom graph) versus, on the x-axis,

the “sputter time” or distance from the back surface of the cell (measured in the time of flight for an ion from the sensor to reach the depth). The vertical green dashed line represents the boundary between the interface passivating layer and the central substrate.



98. The top graph shows a high level of phosphorus “[P]” to the left of the dashed green line, which represents the back surface of the central substrate. To the far right of the top graph (at a depth of greater than 800), the amount of phosphorus drops to a level that is consistent with the amount of phosphorus found in a standard N-type silicon substrate. In between those two points, the graph shows elevated levels of phosphorus in the conductive and passivating layer that continues into the central substrate. The higher level of phosphorus near the back side of the central silicon substrate compared to deeper into the central substrate shows that phosphorus diffused into the central substrate from the back side (*i.e.*, from the conductive and passivating

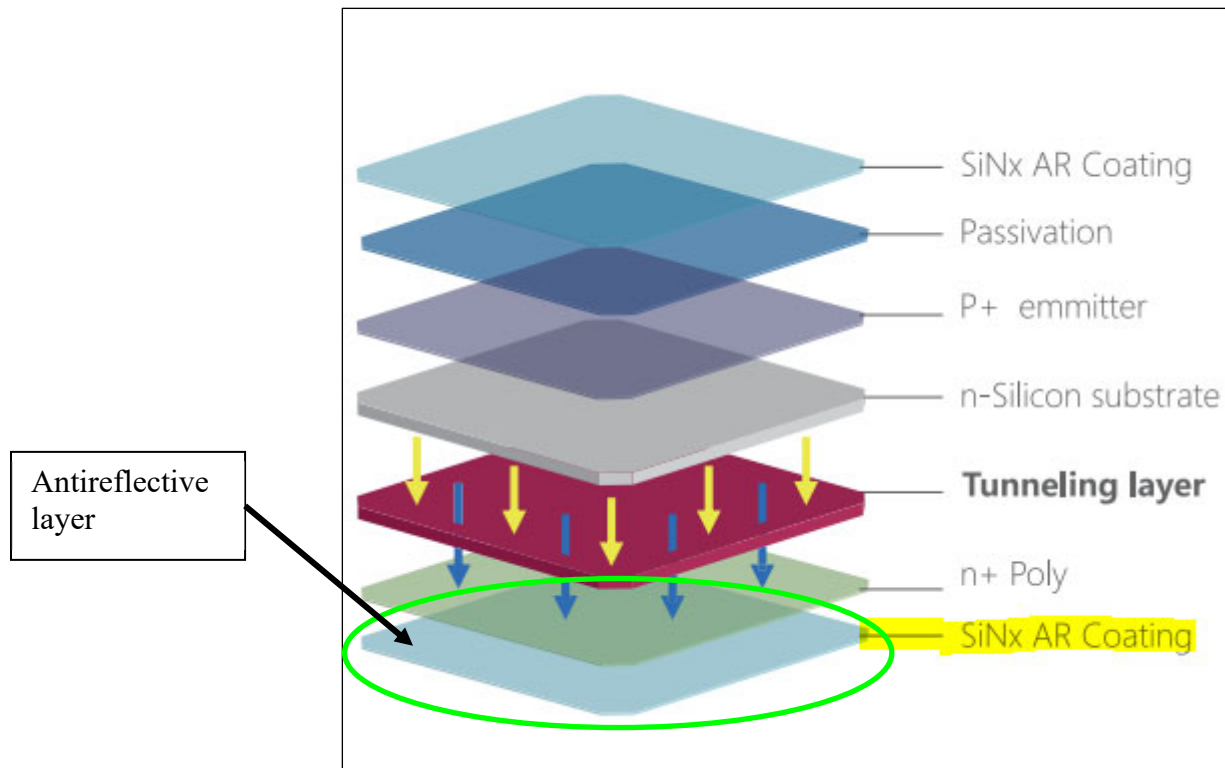
layer). The degree of diffusion shown by these data necessarily requires a thermal treatment of the silicon cell assembly at a temperature above 500 °C.

99. “providing metallization as electrodes which directly contact the at least one conductive and passivating layer following the thermal treatment thereof, wherein the dopant diffused through the at least one interface passivation layer provides shortened charge carrier flow paths between the substrate and the electrodes through the at least one conductive and passivating layer and the at least one interface passivation layer”: JinkoSolar provides metallization as electrodes that directly contact the conductive and passivating layer (the “n+ Poly” layer). Metal electrodes are added to the cells such that they directly contact the conductive and passivating layer to form an electrical connection thereto. As explained below, the antireflective layer (or coating) deposited on the back of the JinkoSolar TOPCon cells is silicon nitride (“SiNx”). SiNx is an electrical insulator, so the electrodes of the JinkoSolar TOPCon solar cells must make direct contact with the conductive and passivating layer to allow an electric current to pass through that layer. Otherwise, the antireflective layer would restrict the flow of electricity between the electrodes and the conductive and passivating layer.

100. The phosphorus dopant that is diffused from the conductive and passivating layer (the “n+ Poly”) through the interface passivation layer (the “tunneling layer”) provides shortened charge flow paths between the substrate (the “n-Silicon substrate”) and the electrodes through the conductive and passivating layer (the “n+ Poly”) and interface passivation layer (the “tunneling layer”) in the JinkoSolar TOPCon solar cell. This is reflected in the smooth transition of phosphorus levels shown in the graph above, resulting in higher conductivity near the back surface of the substrate compared to an assembly that does not have dopant diffused through the interface passivation layer. This causes charge flow paths to curve toward the electrodes

shortening them, as illustrated in concept in Figure 5 of the '074 Patent and described above. Thus, JinkoSolar practices the method of Claim 1 of the '074 Patent.

101. Jinko Solar also infringes Claim 2 of the '074 patent, which recites: “The method of claim 1, further comprising depositing at least one antireflective layer, and/or a low reflective index layer forming a good internal mirror on a back of the solar cell”. The manufacture of JinkoSolar’s TOPCon solar cells includes depositing at least one antireflective layer, a silicon nitride antireflective coating (the light blue “SiNx AR Coating” layer in the schematic below), on the back of the solar cell. The antireflective layer is used to increase absorption, and minimize reflection, of light energy that hits the solar cell from the back (because the device is bifacial and accepts light from both sides of the device). Silicon nitride has a refractive index (a measurement of how much light bends when entering a material) well below 3.0 and therefore forms a good internal mirror on the inside surface of the antireflective layer, such that light that passes through the solar cell from the front is reflected by the antireflective layer back into the cell so as to excite additional electrons. In this way, the antireflective layer is akin to a one-way mirror allowing light from the back side to pass through, while reflecting light from the front side back into the cell.



102. JinkoSolar also infringes Claim 4 of the ‘074 Patent, which recites: “The method of claim 1, wherein the thermal treatment results in perforation of the at least one interface passivation layer to allow carrier transport therethrough”: The amount of phosphorus diffusion into the silicon substrate, as reflected in the graph above, indicates that the JinkoSolar TOPCon solar cell exhibits perforation of the interface passivation layer (the “tunneling layer”) from the heat treatment, which allows greater amounts of phosphorus to diffuse through that layer. These perforations allow improved carrier transportation (electron and hole movement) through the interface passivation layer when the cell is in use.

103. JinkoSolar also infringes Claim 8 of the ‘074 Patent, which recites: “The method of claim 1, wherein the at least one conductive and passivating layer comprises an amorphous, silicon containing compound, and wherein facilitating diffusion of the dopant further comprises facilitating diffusion of dopant atoms into the substrate to provide a high-low junction or a p-n junction”: The manufacture of a JinkoSolar TOPCon solar cell includes making a

conductive and passivating layer (the “n+ Poly”) that comprises an amorphous silicon containing compound. As shown above, facilitating diffusion of the dopant comprises facilitating diffusion of dopant (phosphorus) atoms into the substrate to provide a high-low junction.

104. In violation of 35 U.S.C. § 271(g), JinkoSolar (as detailed above for each JinkoSolar entity) infringes, literally and/or under the doctrine of equivalents, the '074 Patent by importing, and/or causing its subsidiaries and/or affiliates to import, into the United States, JinkoSolar TOPCon solar cells (either as standalone cells and/or as components of modules/panels) that are manufactured overseas using a process (as described above) that is claimed by the '074 Patent; offering to sell, selling and/or using, and/or causing its subsidiaries and/or affiliates to offer to sell, sell and/or use, in the U.S., JinkoSolar TOPCon solar cells (either as standalone cells and/or as components of modules/panels) that are manufactured overseas using a process that is claimed by the '074 Patent; and offering to sell, selling and/or using, and/or causing its subsidiaries and/or affiliates to offer to sell, sell and/or use, within the U.S., including within this judicial district, JinkoSolar products that contain JinkoSolar TOPCon solar cells that are manufactured overseas using a process that is claimed by the '074 Patent.

105. In violation of 35 U.S.C. § 271(b), JinkoSolar (as detailed above for each JinkoSolar entity) has induced, and continues to induce, its intermediaries (including subsidiaries, distributors, retailers, suppliers and/or affiliates) to directly infringe, both literally and/or under the doctrine of equivalents, the '074 Patent by inducing said entities to import JinkoSolar TOPCon solar cells (either as standalone cells and/or as components of modules/panels) into, and/or offer to sell, sell and/or use such JinkoSolar TOPCon solar cells in, the U.S. that are manufactured overseas using a process that is claimed by the '074 Patent; and/or import JinkoSolar products into, and/or offer to sell, sell and/or use in, the U.S., including within this judicial district, JinkoSolar

products that contain JinkoSolar TOPCon solar cells that are manufactured overseas using a process that is claimed by the '074 Patent.

106. In violation of 35 U.S.C. § 271(b), JinkoSolar has induced its customers, and continues to induce its customers, to directly infringe, both literally and/or under the doctrine of equivalents, the '074 Patent by inducing said customers to use within the United States JinkoSolar products containing JinkoSolar TOPCon solar cells that are manufactured overseas using a process that is claimed by the '074 Patent, by taking actions that include, but are not limited to, advertising its products and services and their infringing uses, including on JinkoSolar's website; establishing distribution channels for these products in the United States; drafting, distributing and/or making available product specifications, instructions and/or manuals for the products to JinkoSolar's customers and prospective customers; and/or providing technical support, replacement parts and/or other services for the products to JinkoSolar's customers and prospective customers in the United States.

107. JinkoSolar has had actual knowledge of its infringement, and inducement of infringement, of the '074 Patent since at least September 26, 2024, when First Solar notified JinkoSolar of its TOPCon patent portfolio and JinkoSolar's infringement of at least the '074 Patent. JinkoSolar also likely had knowledge of the '074 Patent on or about July 19, 2024, when First Solar issued a press release announcing its ownership of patents related to the manufacturing of TOPCon solar cells and its investigation into several leading solar manufacturers for potential infringement of these patents.

108. As a result of JinkoSolar's infringement, and inducement of infringement, of the '074 Patent, First Solar has been damaged and will continue to suffer damages. First Solar is entitled to recover for damages sustained as a result of JinkoSolar's wrongful acts, including

lost profits and a reasonable royalty in amounts yet to be determined, and to receive such other and further relief as this Court deems just and proper. First Solar is also entitled to an injunction to prevent JinkoSolar from importing into, and/or using, selling and/or offering to sell in, the United States solar cells that are manufactured using methods claimed by the '074 Patent and/or products that incorporate such solar cells.

109. JinkoSolar's infringement, and inducement of infringement, of the '074 Patent has been, and continues to be, deliberate and willful, and, therefore, this is an exceptional case warranting an award of enhanced damages for up to three times the actual damages awarded and attorneys' fees to First Solar pursuant to 35 U.S.C. §§ 284–285.

110. First Solar makes the preliminary identification of the infringing JinkoSolar TOPCon Products without the benefit of discovery and/or claim construction in this action, and expressly reserves the right to augment, supplement and revise its identifications based on additional information obtained through discovery or otherwise. First Solar anticipates that discovery will further confirm that JinkoSolar TOPCon solar cells that are manufactured overseas using methods claimed by the '074 Patent, and products that incorporate such TOPCon solar cells that are manufactured overseas using the claimed method, are imported into and/or used, offered for sale and/or sold within, the United States.

JURY DEMAND

111. First Solar demands a trial by jury on all issues triable as such.

PRAYER FOR RELIEF

WHEREFORE, First Solar respectfully requests that this Court enter judgment for it and against JinkoSolar as follows:

- A. That JinkoSolar has infringed, and continues to infringe, either literally and/or under the doctrine of equivalents, the '074 Patent;
- B. That JinkoSolar has induced others to infringe, and continues to induce others to infringe, either literally and/or under the doctrine of equivalents, the '074 Patent;
- C. That JinkoSolar and its respective officers, agents, employees and those acting in privity with them, be permanently enjoined from further direct and/or indirect infringement of the '074 Patent;
- D. That JinkoSolar pay damages adequate to compensate First Solar for its infringement, and inducement of infringement, together with interest and costs, arising out of JinkoSolar's past infringement, and past inducement of infringement, of the '074 Patent, JinkoSolar's ongoing infringement, and ongoing inducement of infringement, of the '074 Patent and enhanced damages pursuant to 35 U.S.C. § 284;
- E. That JinkoSolar be ordered to pay pre-judgment and post-judgment interest on the damages assessed;
- F. That JinkoSolar's infringement, and inducement of infringement, is willful and that the damages awarded to First Solar should be enhanced up to three times the actual damages awarded;
- G. That First Solar be awarded damages for its costs, disbursements, expert witness fees and attorneys' fees and costs incurred in prosecuting this action, with interest, including damages for an exceptional case pursuant to 35 U.S.C. § 285 and as otherwise provided by law;

- H. An order requiring JinkoSolar to pay an ongoing royalty to First Solar in an amount to be determined for any continued infringement, and continued inducement of infringement, after the date judgment is entered; and
- I. An award to First Solar of such further relief at law or in equity as the Court deems just and proper.

MORRIS, NICHOLS, ARSHT & TUNNELL LLP

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